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**LA THÈSE A ÉTÉ
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Factors Relating to Success on
The Certified Internal Auditor Examination

Ashley McGain

A Thesis
in
The Department
of
Education

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Arts at
Concordia University
Montréal, Québec, Canada

September, 1985



Ashley McGain, 1985

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ABSTRACT

Factors Relating to Success on the Certified
Internal Auditor Examination

Ashley McGain

The relationship between certain factors and the examination results of candidates in a professional internal auditor examination were the subject matter of this thesis.

A questionnaire, administered coincident with the above noted examination, was the study instrument. It was completed by over 90% of the subjects in this study.

The profile of successful candidates in this examination showed that educational factors - grade point average and university degree - were most prominent. Multiple regression analyses indicated that the above two factors were statistically significant at the .05 level.

The results of this study did not differ significantly from other similar studies, but did confirm the high failure rate common to this examination. The failures suggest that internal auditors may need to review their examination preparation procedures. It is recommended that these candidates consider the use of internal auditing techniques to complement their examination preparation procedures in the future.

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Ashley McGain

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1.0 Introduction

1.1 Context of the Problem

The limited amount of research on examination performance by those aspiring to work in the accounting professions mainly concerns candidates who have proceeded to higher level programs directly from the undergraduate level. The certification process introduced by the Institute of Internal Auditors (I.I.A.) in 1974 permitted a much more diverse group of candidates to register for its professional examination. This examination, according to the information booklet published by the Institute (see Appendix A), "is designed to measure the technical competence of the candidate" (p.1).

The introduction of the Certified Internal Auditor (CIA) Examination was an integral part of the Institute's development as a professional organization. The association of certification with the concept of professionalism is aptly described by Houle (1980), in part, as follows:

...that formal means should be used to test the capacity of individual practitioners to perform their duties at an acceptable level and, in some cases, to license those who are qualified to do so. Recognition of the need for formal credentialing systems was a key element in the evolution from individualized and unregulated practice to modern professionalism. The nature of an adequate system of certifying competence was concisely expressed by the Oxford University Commission of 1852 when it said that "to render a

system of Examinations effectual, it is indispensable that there should be danger of rejection for inferior candidates, honourable distinctions and substantial rewards for the able and diligent..." (p. 54)

Since the Examination was introduced, the number of candidates participating has risen steadily from 654 in 1974 to almost 5,000 in 1982. The heightened interest in the Examination has paralleled the growth of the internal audit function in organizations. This growth in internal auditing has been spurred by the increased concern in both the private and public sectors for a more adequate means of internal control in organizations.

The criteria for passing the CIA Examinations is 75% on each of the four parts of the examination. If we look at the examination results over the 1974-1982 period, shown in Appendix D, we see an upward trend in the number of candidates participating while there is a downward trend in the percentage of candidates passing the examination. Gleim (1981) suggests that this downward trend is "... a natural tendency on the part of the I.I.A. to improve the rigor and reputation of the exam." (p. 9). He also observes that the CIA Examination pass rates are higher than those for the CPA (Certified Public Accountants) yet somewhat lower than those for the CMA (National Association of Accountants). These latter two organizations are American, yet examination results of similar organizations in Canada and the United

Kingdom are comparable.

The matter of 'pass rates' has become more of an issue within the Institute in recent years. The number and intensity of comments regarding what some consider 'low' pass rates has swelled as these rates have trended downward. What are the implications? Some candidates may be deterred from the program, then there are probably others who will rise to the challenge. One group, within the Institute, even suggested that they might consider inaugurating their own certification program. What seems to be a more positive approach is to consider how candidates may be better prepared for the Examination.

1.2. Statement of the Problem

As a long-time member of the Institute of Internal Auditors and a member of its Board of Regents, the body responsible for administering the CIA Examination, this researcher had developed a curiosity about this examination process and its candidates. This study followed and its purpose was threefold.

(a) By studying data about and performance of certain candidates for a 1982 examination to obtain more complete information,

(b) By continuing the process in (a) above, to determine the relationships, if any, between certain factors and the examination results,

(c) To explore matters related to learning strategies, as suggested by the problem of "pass rates".

Items (a) and (b) above have been accomplished by use of statistical analyses. Item (c) suggests an approach to examination preparation which may be appropriate to auditors in particular but could be used by others.

1.3 Review of Research in the Literature

The literature does not abound with research findings related to the CIA Examination in particular, but there is some research related to other professional exams. Much more information is available on research concerning some of the other factors in this study; factors such as, age, sex, the examination process, previous educational achievement and learning strategies. These latter are generally in contexts other than performance on professional examinations.

1.3.1 The I.I.A.'s Certification Examination

In the just over ten-year period since the CIA Examination was introduced there have been some surveys and studies done.

Periodic studies have been carried out for the Board of Regents to test the reliability and validity of exam questions. A survey, reported in The Internal Auditor (1980) established that 73% of those who passed that year's exam had bachelor degrees, while 17% of the passers were those with higher level degrees; another, prepared for the Board of Regents in August, 1980, set out that year's Examination results by test site. This latter statement

revealed that some sites produced higher passing percentages than others. One of the earliest teachers, and writers on internal auditing subjects, Sawyer (1981) opined, "So at least for the present, the candidate most likely to pass the Examination is an experienced internal auditor with a masters degree in business administration and who recently took a CIA review course" (p. 34)

This examination process is relatively new so the paucity of research is probably understandable.

1.3.2 Factors Which May Relate to Success on the Examinations

"The most significant explanatory variable ... was consistently the candidates' grade point average in college courses" (p. 316) stated Reilly and Stettler (1972) in their study of CPA (Certified Public Accountant) candidates. This study, (1) examined the relationships of certain factors to the results of a professional examination, (2) revealed rather strong correlations between the four parts of the examination, and (3) also found SAT-Math, SAT-Verbal (College Entrance Examination Board's Scholastic Aptitude Tests) and a coaching course were other significant variables.

Undergraduate grade point average (GPA) is mentioned in a number of studies related to students in dentistry, education and law. In one, Hood (1962) concluded that "predental grade point average was the most important single predictor of success in dental school" (p. 152). Kress and

Dogan (1981) cite studies from 1948 to 1979 which point to GPA as the best predictor of success in dental schools. Payne, Wells and Clarke (1971) found in research related to students in graduate education programs that "... for the Masters people UA (GPA) was about the best predictor of success" (p. 498). The Chronicle of Higher Education (1978) reports on studies sponsored by the American Bar Association, the Association of American Law Schools, the Law Schools Admission Council, and the National Conference of Bar Examiners, that "the first phase of the study determined that there were positive correlations between students' undergraduate records, their scores on the Law Schools Admission Tests, their records in Law school, and their performance on bar examinations.

Hoyt (1966) found some contrary evidence in a review of research dealing with the relationship of college grades to adult accomplishment. He states "In contrast to the literature dealing with the prediction of college grades, relatively few studies have related college grades to post-college performance" (p. 70). Hoyt (1966) also cited studies in "business, teaching, engineering, scientific research, medicine, and miscellaneous occupations. Only studies in business, notably one by the American Telephone and Telegraph Company, and one study of engineering graduates showed positive relationships between college standing and subsequent success.

Knox (1977) observes that "although there are substantial individual differences in learning ability

little of the variability is related to age" (p. 469). Based on data from longitudinal studies by Owens (1966) relating learning ability and age, there is a plateau of high learning ability extending from age twenty to age sixty and beyond.

The average intellectual ability of men and women is comparable during much of adulthood, according to studies by Bayley and Oden (1955) and Kangas and Bradway (1971). Knox (1977) observes "there are widespread and persistent beliefs about inherent differences between males and females. A small but growing amount of tested knowledge has verified a few sex differences and has demonstrated that many beliefs about inherent and acquired sex differences are unfounded myths" (p. 472).

A bachelor level degree is a prerequisite of the CIA program. This does not raise questions but the lack of emphasis on internal auditing in college curricula is deplored by Reeves (1979) and by Crockett and Arnold (1979). The need to broaden curricula designed for internal auditors to meet the challenges of wider job responsibilities is advocated by Lovejoy, Pitt and Schwartz (1980). The lack of adequate university level courses is also noted by Rosen (1978) in his assessment of accounting education for Canadian chartered accountants. Another view is expressed by Morley (1978) in his survey of the experience of the Institute of Chartered Accountants of Scotland,

Surprisingly, the best performers are the

graduates in other subjects who studied accountancy for only one year at university ... The superior exam performance of these "converted" scholars from other disciplines may be partly due to the breadth of their education ... (p. 30)

Morley (1978) also revealed that Scottish chartered accountants achieved a 70% pass rate on their certification examinations, while their English counterparts only achieved a 35% pass rate on the same exams. The Scottish Institute had developed a special three year training course for its students some time prior.

One of the largest commercial organizations offering coaching courses for the College Entrance Board's Scholastic Aptitude Test claims significant success for their students, Tuhy, C. (1979). Subsequent research by Sesnowitz, Bernhardt and Knain (1982), which analyzed the impact of commercial test preparation courses on SAT scores, did find that coaching helped students who had scored below expectations on previous standardized exams. Some of the candidates for the CIA Examination also followed coaching courses, while others chose a more autonomous approach under the heading of "self-designed study." Some perspective on this latter approach is provided by Dressel and Thompson (1973) with their definition,

Independent study is the student's self-directed pursuit of academic competence in as autonomous a manner as he is able to exercise at any particular period. (p. 1)

and by Boud (1981)

Autonomy in learning does not mean that students work on their own in isolation from others. Autonomy in learning does not imply that there should always be a one-to-one relationship between a student and a teacher or supervisor. It is compatible with autonomous learning for learners to opt to be 'taught' in situations in which they have decided that it is desirable for their own ends. Developing autonomy does not simply involve removing structured teaching; it may require a greater degree of structure than didactic teaching, but of a different kind. (p. 25)

Marton (1978) reports on "... a strong statistical correlation between attitudes to learning and time actually spent on study, and between both of these and examination results ..." (p. 52). Another researcher, Sjogren (1967) found two factors which extended the time needed to learn, (1), poor quality of instruction, and (2), the inability of the learner to understand instructions. The amount of study time required is very much an individual affair, according to Bird (1931).

The Examination is the main discriminator in the decision to award a CIA designation and similar exams are key elements in the certification process of other professional groups. The results of these examinations are

based on test scores and these scores tend to raise controversies. Since test scores are the dependent variable in this study some perspectives on scores and those who produce them seem appropriate. Hoffman (1962) writes of a dichotomy,

Two facts dominate the problem, one is testing must take place. And the other is that, except in the simplest situations, there is no satisfactory method of testing nor is there likely to be. Human abilities and potentialities are too complex, too diverse, and too intricately interactive to be measured satisfactorily by present techniques. (p. 29-30)

Another writer points out that test results do not tell the whole story, nor should they be expected to do so, Lyman (1971). In spite of the above comments, Entwistle and Wilson (1977) do enunciate the common view, "A student's success is generally judged on examination performance" (p. 10).

Those who write exams may be difficult to evaluate. Lyman (1971) writes,

... a person's test score necessarily depends in part on his inborn potential as it has been modified by his life experiences (education, training, environment, etc.), and by his motivation at the time of testing. (p. 10)

and Hoffman (1962) observes,

... a student can have an off day when he takes

the examination. Or, if he is outrageously lucky, he may be in radiant health on that day and also have studied just the right things the night before. Some students never do themselves justice on written examinations - they just go to pieces.
(p. 30)

Vernon (1968) offers this opinion.

Not only do human beings differ from one another, but also each individual varies in his capacities and characteristics from time to time. The score he achieves today may or may not be typical of his usual accomplishments. (p. 2)

The assumption, that all candidates in a study are equally and highly motivated, is made. To the extent that this assumption is not justified, study results must be discounted, according to Lyman (1971).

1.3.3 Learning Strategies and Achievement

A cursory survey of the literature shows that a considerable array of it exists relating to learning strategies and achievement. This survey of the literature shows that the whole process of learning, the use of learning strategies, and the relationship of these latter to achievement is a very complex one. Borger and Seaborne (1966) and Lefrancois (1979) define learning as changes in behavior resulting from experience. Bruner (1983) writes,

"Learning" is, most often, figuring out how to use what you already know in order to go beyond what

you currently think. There are many ways of doing that. Some are more intuitive; others are formally derivational. But they all depend on knowing something "structural" about what you are contemplating - how to put it together. (p. 183)

and Bruner (1966) emphasizes structure again in respect to learning,

To achieve a sense of accomplishment requires a task that has some beginning and some terminus... Unless there is some meaningful unity in what we are doing, we are not likely to strive to excel ourselves. (p. 119).

The above suggests that some organized approach to learn-problems is required. Writers, such as Mitchell (1975) and Romiszowski (1981) focus on a systems approach to solving learning problems. Such organized approaches are consistent with those taken by internal auditors in solving management problems, Sawyer (1981). Within such approaches one can consider many different strategies to achieve objectives. This leads one to ponder the comment of Borger and Seaborne (1966),

Strategies differ in their effectiveness, and the use - whether consciously or not - of a particular type of approach to learning situations is likely to have far-reaching consequences for a given learner. (p. 186)

Persons do have preferred and different approaches to learning and these should be recognized, Snow (1978). One

can consider the "atomistic" or "holistic" cognitive approaches, Svensson (1977) or Buzan's (1982) organic study method, to identify two - there are others. The objective of each such approach is the improvement of learning outcomes.

1.3.4 Other Related Factors

Research by Wahlstrom and Boersma (1968) and by Moore, Schultz, and Baker (1966) identify test-wiseness as an important source of variation in test scores. This research seems to strongly suggest the need for test preparation in other than the subject matter of the examination. Other research by Bajtelsmit (1977) with candidates for the Chartered Life Underwriter (CLU) program studied those who undertook test-wiseness and test anxiety courses. Results for candidates taking those courses were significantly higher than those who did not participate in them.

Bertrand Russell notes that "causal laws are really only applicable to a completely isolated system" (p. 198). The degree of association between two variables does not of itself indicate a causal relationship yet studies of relationships between variables, it seems, identify the need to address this matter. Minium (1978) is specific,

If one is to speak of causation, it must be on grounds over and above those merely demonstrating association between two variables. (p. 163)

and Blalock (1964) is categorical,

One admits that causal thinking belongs completely

on the theoretical level and that causal laws can never be demonstrated empirically. (p. 6)

1.4 Statement of the Hypothesis

The following hypothesis was formulated based on the above:

Three independent variables; grade point average, examination preparation and age will correlate statistically at the .05 level with examination scores, the dependent variable. The other variables used in the questionnaire were selected, (1) because of their relevance in other studies e.g., hours of study, and/or, (2) because of interest in the Institute for certain data e.g. I.A. Member.

1.5 Rationale for the Hypothesis

Many of the research studies noted above show a fairly high level of association between undergraduate grade point average and success on subsequent postgraduate examinations. Some of those studies show improved exam results when certain learning approaches were followed. Age did not show as a significant factor in any of the studies reviewed, but in the case of CIA Examination candidates there is a notable difference in the ranges of their ages - about twenty-five years. The range of ages in the other studies was generally not mentioned and was assumed to be very narrow.

1.6 Relevance

Confirmation of the relationship between GPA, preparation methods and exam scores carry implications for future success of the CIA Examination and for those who

write it. If GPA is a factor in exam scores, we will learn something about the nature of the exam. If preparation is a factor, we will be able to focus on the role of instructional strategies. If age is a factor, we will learn something about the nature of the successful candidate. These issues will be explored in the discussion section.

1.7 Operational Hypothesis

Based on the above the following operational hypothesis can be stated:

$$X_0 = f(X_1, X_2, X_3, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{15}, X_{16})$$

where

X_0 = the average score on all four parts of the Examination or the score on one of the four parts (Principles of Internal Auditing, Internal Auditing Techniques, Principles of Management, Disciplines Related to Internal Auditing)

X_1 = I.I.A. member

X_2 = Age

X_3 = Sex

X_6 = Employer classification

X_7 = Job classification

X_8 = Years of work experience

X_9 = Years of internal audit work experience

X_{10} = Employer's support

X_{11} = Highest academic degree

X_{12} = Year of above degree

X_{13} = Major

X_{14} = Grade point average

X = Examination preparation
 15
 X = Examination preparation time
 16

1.7.1 Dependent Variable(s)

The dependent variable is the Examination score (average of the scores on the four parts of the Examination) or the score of one of the four parts of the Examination.

Although the criteria for achieving the success on the CIA Examination is 75% on each of the four parts, it was thought useful to explore the results of each of the exams separately in order to identify any possible specific situations related to a particular part of the exam.

1.7.2 Independent Variables

The independent variables of this study are derived from the responses to the questionnaire - Candidate Profile Census - attached as Appendix C. One way of categorizing these variables is as follows:

<u>Category</u>	<u>Item on Questionnaire</u>
Personal	1,2,3
Employment related	6,7,8,9,10
Education related	11,12,13,14
Examination related,	15,16

1.8 Significance of the Study

It is hoped that this study will help to identify factors which may lead to success on the Examination. Such information may assist the Institute and its Board of Regents in directing future candidates in respect to their preparation for and writing of the Examination.

2.0 Method

2.1 Sample

The sample used in this study includes only those candidates who wrote all four parts of the Examination, see Appendix D, and who completed the questionnaire, Candidate Profile Census, attached as Appendix C.

Candidates must initially choose to write at least two parts of the Examination, then the other parts singly or together, as long as the process is completed within a five year period. All of the candidates for the May, 1982 Examination were invited to complete the questionnaire, Appendix C, and a large majority chose to do so. Based on the sample selected for this study about 5% did not respond to the questionnaire at all. In addition there were others who only partially responded, e.g., completed only the face side of the questionnaire or did not respond to one or more questions.

The study sample was selected to yield a representative cross-section of candidates who would not have been influenced by actual prior test experience on the CIA Examination. The figure of 679 candidates shown in Appendix D as passing all four parts of the Examination included the first-time examination writers plus those who had previously attempted one or more parts.

In order to eliminate those candidates who may have previously written one or more parts of the Examination, only those who qualified as first-time writers, based on their candidate number, have been included in the study.

2.2 Research Design

Survey research was used in this study because it appeared to be the best way to obtain information about a population which is widely dispersed geographically. Although over 90% of the candidates are located in Canada and the United States, there are candidates participating from all over the world.

The questionnaire used in this survey was administered through the good offices of the Institute and its local representatives at each of the over 100 exam sites. Appendices C, E and F provide background information related to that administration. The questionnaire was given to the candidates just prior to the Examination and was completed by most candidates within a short time period. Much credit for the excellent response to the instrument by the candidates must be given to those administering the Examination and to the candidates themselves who responded. There can be problems if volunteers do not respond. This is aptly stated by Entwistle and Wilson (1977), as follows:

In planning a research project there can be no initial expectation that students will be eager volunteers. They must first be persuaded that the project is worthwhile and that it may be of value - to students in the future, if not to themselves.

2.3 Instrumentation

A questionnaire, Appendix C, was used because it was considered as one of the best ways to obtain information in

a clear, concise, and reasonably accurate manner, and also within cost boundaries. It was recognized that the choice of this particular instrument could present problems, for example, a low response rate; however many of the potential problems were avoided through the generous assistance of the Institute and its representatives when it was decided to administer the questionnaire coincident with the Examination. The respondents to the questionnaire were also assured that individual data would be kept confidential - see attached Appendix E.

The data from the questionnaire was recorded on a separate specially marked answer sheet, see attached Appendix F. These forms were collected separately at each of the exam sites and forwarded to the Institute for processing. The questionnaire data and the Examination results were subsequently assembled by the Institute on a computer file from which the data for this study was derived.

The questionnaire was initially developed by this researcher and modified with the assistance of the Board of Regents and the Certification Division of the Institute of Internal Auditors. It was agreed that the opportunity to collect data should make it possible to satisfy the information requirements of the Board of Regents, the Institute and this researcher.

2.4 Data Analysis

Various statistical analyses were undertaken to respond to the questions raised in paragraph 1.2 above.

In order to test the hypotheses in the above paragraphs 1.4 and 1.7, chi-square and multiple regression analyses were made.

From the above analyses and from other tests, additional information was obtained about the Examination candidates and about certain relationships between the variables employed in this study.

3.0 Results.

3.1 The Examination and its Candidates

Table I

CIA Examination by Part Analysis
of Study Sample (N=525)

<u>Exam</u>	<u>Candidates</u>		<u>Test Scores</u>		
	<u>Pass</u>	<u>Pass %</u>	<u>Mean</u>	<u>High</u>	<u>Low</u>
Part I	267	50.9	70.03	89	36
Part II	278	53.0	69.19	94	35
Part III	280	53.3	71.21	93	31
Part IV	203	38.7	58.80	98	8
Aver. of 4 Parts	111	21.1			

The pass percentage for the study group from Table I above are comparable to those in Appendix D for the May, 1982 Examination, except that the Part I and Part 2 results in the sample group are more favourable by about 12 - 13%.

Table II

Simple Correlation Coefficients
Between the Test Scores on the CIA Examination (N=525)

<u>Variable Name</u>	<u>Aver.</u>	<u>Part I</u>	<u>Part II</u>	<u>Part III</u>	<u>Part IV</u>
Aver. of 4 scores	xx	.77	.83	.70	.86
Part I Score		xx	.65	.52	.47
Part II Score			xx	.47	.55
Part III Score				xx	.46
Part IV Score					xx

Table II contains the simple correlations between the five test scores. The correlation coefficients show a fairly close association between the scores for the four parts of the Examination. The strongest intercorrelation was between Parts I and II, Principles and Techniques respectively, of Internal Auditing, while the weakest intercorrelations was between Part III and Part IV. Part I and II are respectively the theory and practice of Internal Auditing. Part III, Principles of Management and Part IV, Disciplines Related to Internal Auditing examine subject matter which is more divergent in content.

Table III

Simple Correlation Coefficients Between the Independent Variables and the Test Scores on the CIA Examination
(N=525)

<u>Variable Name</u>	<u>Test Scores</u>				<u>Aver. of all 4</u>
	<u>Part I</u>	<u>Part II</u>	<u>Part III</u>	<u>Part IV</u>	
1. I.A. Member	-.07	-.07	.04	.03	-.02
2. Age	-.06	.01	.02	.03	.01
3. Sex	-.01	.02	.06	.08	.06
6. Employer	-.01	-.02	.05	.07	.04
7. Job	-.13	-.12	-.03	.04	-.05
8. Yrs. Work Expce.	.02	.04	.03	.06	.05
9. Yrs. I.A. Work Expce.	-.02	.00	-.07	.06	-.05
10. Employer Support	.05	-.01	.02	-.04	-.01
11. Degree	.11	.18	.18	.22	.22
12. Yr of Degree	.00	.01	.01	.01	.01
13. Major	-.07	-.06	-.01	-.10	-.08
14. GPA	-.27	-.25	-.28	-.32	-.36
15. Exam Preparation	-.06	.04	-.08	.06	.01
16. Study Time	.19	.08	.07	.08	.12

Note: Scale for Ques. 7 (Job) and Ques. 14 (GPA) was reversed on Questionnaire - Appendix C.

The correlations between the independent variables and the five test scores in Table III clearly show one variable, GPA with the strongest association to the test scores. This

pattern seems to indicate what to expect from the multiple regression analysis.

Table IV below, shows comparisons of the frequencies of candidate responses for various independent variables, for the total study group, those in that group who passed all four parts of the Examination, and a sample of those who failed Part IV.

An examination of the responses by the successful candidates indicates some fairly notable differences. A higher percentage fit into the 30 - 34 years-of-age group, have higher level degrees, graduated between 1975 and 1979, had superior grade point averages and spent longer time studying for the exam.

The failure rate in Part 4 has always been higher than that for any of the other Parts, so the May, 1982 Examination results were not unusual - see Appendix D.

This analysis for this study showed that the failure in Part 4 included higher percentages of candidates in the 18 - 29 years-of-age range, who were lower level internal auditors (e.g. Internal Auditor), who had lower level degrees (Baccalaureate), who reported lower levels of grade point averages, and who spent less time studying for the Examination.

Table IV

Comparison of the Percentages of Candidate Responses to the Questionnaire Items by
 (1), Total Study Group (N=525), (2) Those Who Passed All Four Parts of the Examination (N=111) and,
 (3) a sample of those who failed Part IV (N=215)

	Total	Pass	Failures Part 4
1. I.I.A. Member			
Yes	42.2	40.5	44.7
No	57.8	59.5	55.3
2. Age			
18-24 years	18.4	16.2	20.5
25-29 years	34.7	32.5	35.3
30-34 years	23.4	30.6	30.0
35-45 years	19.8	17.1	21.4
45 plus	3.7	3.6	2.8
3. Sex			
Female	25.0	21.6	31.6
Male	75.0	78.4	68.4
6. Employer Class.			
Manufacturing	20.7	21.6	18.6
Retail	2.6	1.8	2.3
Finance & Banking	21.2	14.4	20.9
Government	9.5	8.1	12.6
Other	46.0	54.1	40.0
7. Job Class.			
I.A. Mgr. or Above	13.4	17.1	11.2
I.A. Supervisor	8.3	5.4	11.2
I.A. Senior	21.7	23.5	17.2
Internal Auditor	39.7	32.4	43.2
Other	16.9	21.6	17.2
8. Years Work Experience			
None	1.5	1.8	1.4
Less than 2 years	16.3	13.5	18.6
2-4 years	27.1	27.0	27.5
5-7 years	19.1	20.7	19.5
8 years or more	36.0	37.0	33.0
9. Years I.A. Work Exp.			
None	5.9	7.2	6.0
Less than 2 years	41.1	43.3	38.6
2-4 years	32.5	35.1	29.3
5-7 years	13.2	10.8	13.5
8 years or more	7.2	3.6	9.8

Table IV (cont'd)

10. Employer Support			
Negative	1.9	1.0	2.3
Indifferent	12.0	20.0	12.6
Some Support	16.5	9.0	19.5
Medium Support	22.2	20.0	24.2
Strong Support	47.4	50.0	41.4
11. Degree			
Bacc. in progress	1.7	0	2.3
Baccalaureate	71.0	59.5	80.0
Masters	24.4	34.2	15.8
Doctorate	2.1	5.4	1.4
Other	.8	.9	.5
12. Year of Degree			
1980 or after	30.6	25.2	29.8
1975 to 1979	39.8	46.0	38.6
1970 to 1974	20.1	19.8	21.4
1965 to 1969	6.7	6.3	7.4
Before 1965	2.9	2.7	2.8
13. Major			
Accountancy	68.1	71.6	67.0
Business	22.7	24.0	24.2
Computer Science	.4	0	n/a
Engineering	.3	1.8	n/a
Other	8.5	4.6	8.8
14. Grade Pointe Aver.			
Superior	19.2	36.0	12.6
Above Average	60.0	57.7	55.8
Average	19.6	6.3	29.3
Below Average	.4	0	.9
Don't Know	.8	0	1.4
15. Exam Preparation			
Chapter CIA Rev.	19.0	20.2	18.0
Employer CIA Rev.	2.2	1.9	4.3
Commercial CIA R.	21.0	21.2	23.7
Self-Designed	51.3	52.9	46.4
Other	6.5	3.8	7.6
16. Exam Study Time			
None	2.9	.9	3.3
1 - 50 hours	35.1	28.2	40.9
51 - 200 hours	49.4	53.6	44.7
201 - 300 hours	10.7	15.5	10.2
More than 300	1.9	1.8	.9

3.2 Factors Related to Examination Success

Regression analysis was also used in this study to show the relationship between the test scores of the Examination and a set of variables contained in the study instrument.

Before completing the regression analysis, chi-square analyses for each test outcome by each of the independent variables were made. This run dichotomizes the five tests as pass or fail at 75% for a passing grade on each test. The results of these chi-square analyses are summarized in Table V. Of particular interest was the statistical significance of the nominal independent variables, (IIA Member, Sex, Industry Classification, Major, Nature of Preparation). In Part IV Sex and Industry Classification were significant and in Average of All 4, Major was significant.

Stepwise regression analysis was then carried out introducing the independent variables including the dummy ones in order of their statistical significance. These results are reported in Table VI.

The results show that the most significantly explanatory variable was consistently the candidate's grade point average. A comparison of the strength of the relationship of that variable and others is reflected in the tables below.

Table V

Chi-Square Analyses for Each Test by Each
of the Independent Variables. The X² Values
Reported are Significant at the .05 Level

<u>I.V.'s</u>	<u>Part 1</u>	<u>Part 2</u>	<u>Part 3</u>	<u>Part 4</u>	<u>Aver. of All 4</u>
GPA	30.19	26.39	28.57	39.96	43.73
Degree	-	19.18	10.98	33.52	26.10
Age	12.76	-	-	-	-
Sex	-	-	-	6.52	-
I.A. Job	10.02	-	-	-	-
Industry Class.	-	-	-	11.15	-
Yrs. I.A. Work Expce.	-	-	9.87	-	-
Employer Support	13.17	-	-	-	-
Major	-	-	-	-	11.97
Hrs. of Study	23.21	-	-	-	-

Table VI

Changes in the Coefficient of MR Using Stepwise
Multiple Regression with the Introduction of
Independent Variables in Order of Their Statistical
Significance at the .05 level

<u>I.V.'s</u>	<u>Part 1</u>	<u>Part 2</u>	<u>Part 3</u>	<u>Part 4</u>	<u>Aver. of All 4</u>
GPA	.26	.27	.28	.30	.35
Degree	.40	.30	.30	.37	.37
Hrs. of Study	.33	-	-	-	.44
I.A. Job	.38	.33	-	-	-
Employer Support	.35	-	-	-	-
Age	.36	-	-	.38	.40
Sex	-	-	.31	.33	.39
Industry Class.	.39	.35	-	.39	.42
Yr. of Degree	-	.36	-	-	-
Yrs. Work Experce.	-	.37	-	-	-
Yrs. I.A. Work Expce.	-	-	.32	-	.43
I.A. Member	-	-	-	-	-
Major	-	-	-	-	-
Nature of Prep.	-	-	-	-	-

The data in Tables V, and VI are consistent with that reported in Tables III above. The hypothesis that was proposed in paragraph 1.4 is only valid for one of the factors - GPA.

In order to further check on the significance of the factors, Age and Sex, one-way analyses of variance were made.

The Age factors was significant at the .05 level in Test 1. This analysis also showed that the 30-34 age group was significantly better at the .05 level from each of the other age groupings for this test.

The Sex factors was significant at the .05 level in Test 4. The Test 4 mean scores were:

Female	55.01
Male	60.04

In the other three tests mean scores for each sex were different by less than two.

4.0 Discussion

4.1 An Appraisal of the Study Instrument

After using the Questionnaire (Appendix C), what is the assessment? The reasons for using a questionnaire were outlined above. Were these justified by the study?

The coupling of the Questionnaire with the Examination provided for a very wide distribution of the instrument to the maximum number of candidates, not accessible by almost any other means. Thus a very economical means of obtaining a large body of data was realized. The high response rate (over 92% in the study group) gave assurance of a representative answer from the Examination candidates. That response rate also indicated a willingness on the part of the candidates to participate in a research study which they might not benefit from or be interested in as individuals.

The use of the instrument for other than the purposes of this study, specifically for the Institute's information needs, had many advantages with few disadvantages. The widespread distribution of the instrument and the associated response rate were definite advantages. Questions 1 and 6, for example, neither added to nor subtracted from the study results. Questions 4 and 5 should have identified first-time Examination writers (all four parts) more precisely and provided the Institute with useful corroborative information, but a programming error in the initial data collection process rendered the responses to these questions meaningless.

There were a few candidates who only responded to one

side of the questionnaire (14 in the study sample). A somewhat different design of the instrument might have generated a slightly higher number of complete responses.

Was there bias in the responses to the Questionnaire? Since most of the questions related to factual data, it was assumed that responses to those questions accurately reflected the facts. Question 10, relating to employer's support, may have been interpreted differently by the candidates. The word "support" could elicit different meanings, e.g. financial, boss encouragement, special training or time off to study. Such differences would not, it was assumed, affect the overall response to that question. Question 14 concerning grade point averages showed results which favoured the high end of the measurement scale. Does this mean that candidates tried to show themselves in the best light? Not necessarily, for all of these candidates have baccalaureate and/or higher degrees. It would not be abnormal for them to own such grade point averages, in this researcher's opinion.

Overall the instrument gathered considerable data which produced useful study information, reached a widespread clientele and generated a high response rate from the Examination candidates. The only additional costs associated with this instrument were those for recording the data. These were absorbed by the Institute and were not high.

4.2 Conclusions

What do the results of the study indicate? They can be looked at in relation to the main questions posed in para. 1.1 above.

The information obtained about the Examination and its candidates from this study can be generally categorized in two ways. There is the information about Examination scores, and about the percentages of persons passing the Examination, both of these broken down by parts of the Examination. Then there is the information resulting from this study which explored certain characteristics of the candidates and provided profiles as a result.

4.2.1 The Examination and its Candidates

As noted previously the passing percentages shown in Table I above reflect similar information to that published by the Institute and reported in Appendix D. The results of this study confirm patterns about the Examination results which have been prevalent since its start in 1974. The information from this study which may be new are the correlation data in Tables II and III above and some of the data on frequencies reflected in Table IV.

4.2.2 Factors Relating to Success on the Examination

Earlier in this paper, a quotation from Sawyer (1981) suggested "the candidate most likely to pass the CIA Examination". One of the results of this study may be a more precise profile of the successful candidate. That candidate would likely be a person with a Master's or

preferably a Ph.D. degree and with an above average grade point average. There was little statistical evidence to support, experience as an internal auditor, or, type of training, e.g., a CIA Review Course, as significant factors associated with success on the Examination. Refinements to the Sawyer profile are suggested by the results in Tables III to VI.

There were factors which affected Examination scores in the study in a statistically significant manner - Table VI. These factors are somewhat different to those hypothesized in a previous paragraph, (1.4). The study showed that, in a relatively significant order, grade point and degree, were the principal contributing factors in the regression analyses. Grade point average and degree, factors associated with academic achievement, were consistently significant ones in other studies and were not unexpected results.

Even though a baccalaureate degree is one of the prerequisites to writing the Examination, it was not included in the original hypothesis. Since measures of academic achievement do seem to be fairly highly associated with success on examinations, the variable 'degree', even though it is probably not as qualitative a factor as 'grade point average', should have been considered in the original hypothesis.

Since over 90% of the majors in this study were in accountancy or business administration (Table III), and

since the body of knowledge on which the Examination is based has much in common with the above noted disciplines, those majors probably were the main contributors to the correlations with Examination results. It is noteworthy that for Parts 1, 2 and 4 of the Examination the correlation of 'Major' with those scores was relatively higher than for Part 3. The body of knowledge for this latter Part would probably play a less significant role in the curriculum of accountancy and business administration programs. No details were available of the 'Other' category under the variable 'Degree', so it was not possible to compare with experience of Scottish chartered accountancy students, as mentioned above, (Morley 1978).

Studies quoted above reported the association between study time and examination successes. The results in this study tend to support that research's conclusions. The group who passed the Examination reported somewhat longer study periods than the group who failed Part 4. See Tables III and IV respectively. The reason why the correlation of 'Study Time' with Part 1 scores is much higher than that for Parts 2, 3 and 4 scores is not readily explainable.

The higher correlation of 'Job' with the scores of Parts 1 and 2 than with those of Parts 3 and 4 can be explained, in part, because the first two parts of the Examination are about internal auditing. The body of knowledge for Parts 1 and 2 is closely allied with the knowledge and skill requirements of the internal auditing jobs.

The reasons are not readily apparent as to why a certain age grouping, 30 - 34 years, in this study achieved higher mean scores on all four parts of the Examination - statistically significant at the .05 level for Part I - and why males achieved higher mean scores than females on all four parts - statistically significant at the .05 level for Part IV.

Experience in internal auditing can be an advantage for writers of Parts I and II (the internal auditing sections of the Examination). It may also be that the opportunity for additional breadth of learning and the longer experience at work may have contributed to the higher performance levels overall by the 30 - 34 age group in this study.

About 70% of the candidates in this study were males. Based on this researcher's experience the numbers of females entering the accounting and auditing areas of work were considerably less than the male entrants, until recent years. The increased number of females now entering the above disciplines will, in this researcher's opinion, probably mean that future studies in this area will not reveal any significant differences between female and male performance on this Examination.

4.2.3 Examination Failures

It was noted above that the failure rate in this Examination is not very different from that in similar professional examinations. Having said that, it does concern this writer that the failure rate in the CIA

Examination is so high. Aside from the fact that such failure rates may discourage potential exam-writers of the future and dishearten those who have tried the Examination, there is the possibility that some of the failures could have been avoided. A possible approach to reducing the number of failures is discussed later in this paper.

One can easily dismiss the whole thing by concluding that the ~~candidates~~ concerned were unprepared. Or one could ask in what way were these exam-writers found wanting? Was it a lack of knowledge of the subject matter? That may have contributed significantly to failures - but what other factors might have intervened?

It was recognized, when the study was conceived, that there are other factors which could have influenced exam results and might have been included as independent variables. Time was an important factor in administering the questionnaire coincident with the Examination. This was one reason for not including other independent variables. Another reason was the difficulties foreseen in trying to measure most of the factors mentioned below.

The candidates in this study were first-time Examination writers. Did 'test-anxiety' and/or 'test-wiseness', two factors which have been previously shown to influence exam results, play a significant role in this situation.

It was assumed that the candidates writing the Examination were motivated, but how much difference was

there among the candidates in their respective drives - their desire for excellence.

There was also the matter of the candidate's state of readiness - mental and physical, as well as their overall morale. These are factors cited which could influence performance on examinations.

Whether any of the factors referred to in the above few paragraphs contributed to the failures on the Examination is speculative. What is known from this study are the results commented on in para. 3.1 above concerning exam failures.

4.3 Implications

What are the implications? The results of this study basically confirm findings of other studies of candidates for professional examinations. In those other studies reviewed the researcher or researchers were often trying to identify predictor variables. Such identification has been used to provide information to professional schools, and to assist their prospective students, in their respective admission considerations. While such studies may be helpful in the admission process, there was also evidence to suggest that the predictors, identified with success in graduate programs, were not absolutes and, in one study, tended to vary with ethnic backgrounds, family education, and family wealth, for example.

There was no intention to identify predictor variables in this study of internal audit examination candidates. The candidates for the CIA Examination are accepted, based on

the criteria outlined in Appendix A, pp. 67-68. As long as the prospective candidates satisfy the requirements noted above they are accepted. There has been no need up to now to restrict the number of candidates seeking to write the Examination. Whether such control would need to be exercised in the future is problematical.

What significance has this study for the Institute? As mentioned above, some of the statistics only confirm previous information about the Examination and its candidates. and there is new information issuing from the use of certain independent variables in this study. It is expected that the study itself will be of interest to the Institute and its Board of Regents.

Educational activities have become increasingly prominent in the Institute in recent years. Conferences, courses and seminars have been developed and staged. An array of publications have augmented internal auditing literature. Most of this has been directed at the development of the internal auditing function, and at internal auditors, in their quest for increased effectiveness. It is also a fact that such material is now available for candidates of the CIA Examination, to assist them in their preparation. This is a considerable change since the Examination was launched just over ten years ago. In spite of this, the failure rate has changed little in the same period. There may be opportunities for the Certification and Education Divisions of the Institute to devise additional educational assistance for Examination

candidates.

4.4 Summary

It seems evident from the results of this study, and from the discussion above, that new findings have not emerged concerning factors which might influence success on a professional examination. It probably can be stated, based on this study, that factors, which have been shown to influence success by candidates on other professional exams, do also influence the success of candidates for the Institute of Internal Auditors' professional examination. Does this then indicate that the research study was unproductive? It could be seen in that light, but more positively, there are some potential benefits.

This study revealed, based on the regression analyses that almost 20% of the variance in the Examination scores was accounted for by the independent variables. It can probably be inferred that other factors, only some of which were mentioned above (para. 4.2.3), could have had an effect. The chi-square, correlation and regression analyses showed that some variables made significant contributions to the results while others barely affected them. All of this could be useful to others who might make a related study.

Since this study has shown similar results for pass/fail ratios to those for the study period (May 1982 Examination) and for previous periods (see Appendix D), it leads to the question, in retrospect, whether the study should have been directed to the 'failures' group, almost

80% of the study population. There are some results pertaining to the 'failures', which have been described above, but unless much more extensive research were undertaken, one can but speculate about the factors which contribute to failure on examinations.

4.5 An Approach to Preparing for the Examination

Instead of speculating about the problems of examination failures there is an approach which internal auditors may want to consider. It is an approach particularly suited to their background knowledge and skills. It is the use of the internal audit process to assess control over the examination preparation procedures that is recommended.

Internal Auditing has been defined by Sawyer (1981) as follows:

As independent appraisal of the diverse operations and controls within an organization to determine whether acceptable policies and procedures are followed, established standards are met, resources are used efficiently and economically, and the organization's objectives are being achieved. (p.

6)

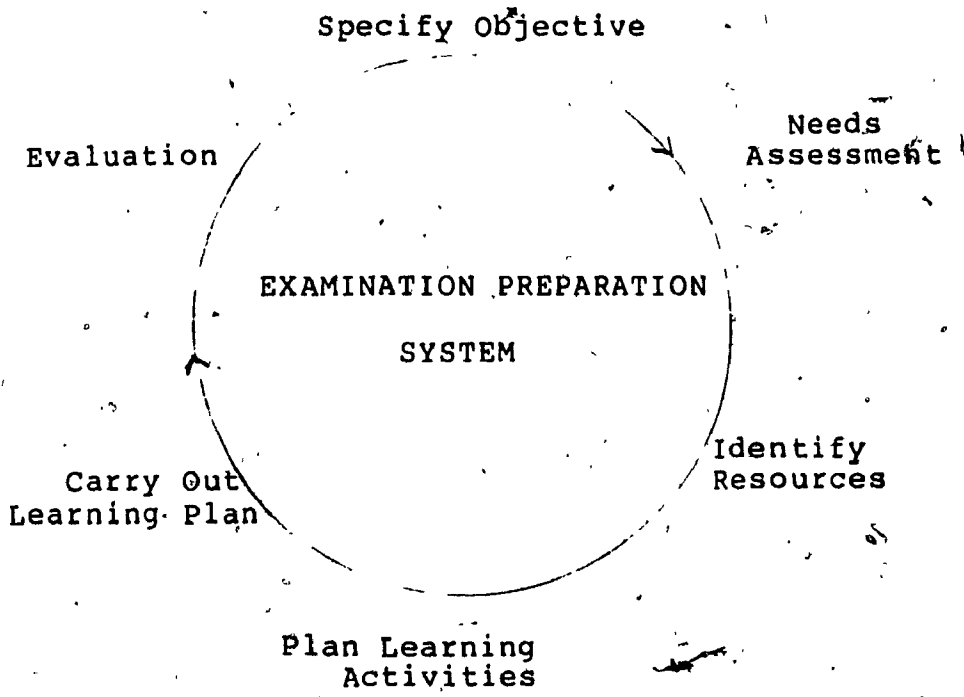
He suggest that this definition calls for professional objectivity, a broad scope of operations to review all relevant matters, reviewing the management of all resources, and the evaluation of planned missions to find out if projects are achieving what was intended.

Some may ask - why use the internal audit process for the above stated purpose. They may suggest it is too time-consuming or that it is complex. It may seem time-consuming to some, but consider the alternatives; the time lost from examination failures, the time required to prepare for re-examination. An audit of the examination preparation process, which is described later, is not an easy task; but it should not be more complex than many other audits. An internal auditor's job is auditing, and this can include a wide variety of operations in many different settings, some of which can be very complex.

How can we be assured that internal auditing can do the job of assessing the controls in the area of examination preparation? Internal auditing has been developed into a powerful tool to assist organizations in both the private and public sectors to achieve their goals. It is widely recognized as an indispensable aid in improving the control environment of systems. By itself, internal auditing cannot guarantee the achievement of objectives. When it is used with proper management the attainment of objectives is made more possible. Similar attainment of control over the examination preparation process should also be possible.

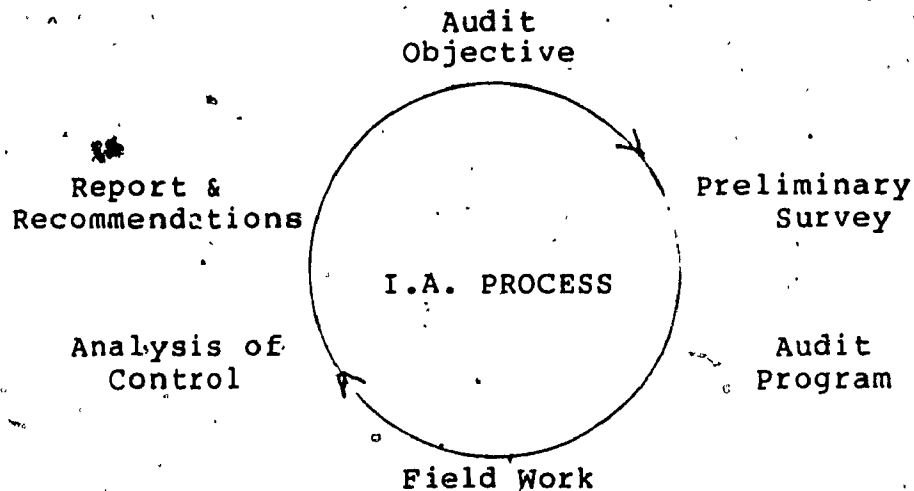
What is being called an examination preparation process or procedure? Upon examination the so-called procedure for examination preparation is in reality a system. It is an entity, which is goal-seeking, requires proper use of resources, and needs adequate planning and realistic

management, as a minimum. Such a system may be described as in the diagram below:



Assuming that the above system or plan goes into effect, then at each stage of the system, controls are required. Koontz et al (1980) points out "Once a plan becomes operational, control is necessary to measure progress, to uncover deviations from plans, and to indicate corrective action" (p. 717). Control is achieved, in part, by good management. It can be supplemented by timely auditing. The primary objective of an audit is to establish that there are controls and that these are effective.

The activities involved in making an internal audit can be depicted as in the following diagram:



The Preliminary Survey is just that - an overview of the problem to be addressed in order to familiarize the auditor with the whole operation. It involves questioning, obtaining information, reviewing objectives, establishing whether standards exist, and making an initial assessment of controls.

The Audit Program is the plan an auditor follows to achieve objectives. Each audit program is tailor - made to suit the particular situation under review.

Field Work comprises recording, measuring and evaluating of what is found. What was done, how well, and did it deviate from standards, are matters of concern.

The Analysis of Control programs flow from the results of the field work. These analyses determine the control deviations and their impact.

The Report and Recommendations, respectively, are a summary of the activity and a documentation of appropriate actions required.

The Audit Objective can only be achieved when the audited situation is under control and all deviations from control adequately resolved.

How do we translate the above procedures into an audit of the examination preparation system. One approach is to do the audit coincident with the system activity. This is the approach taken in industry to audit large systems under development; it helps to ensure that controls are built into the system as it develops and can avoid costly redevelopment and time delays. On a step by step basis, the auditor investigates, tests and assesses the controls and their effectiveness. As the audit proceeds from the "Needs" stage to the "Resources" stage, and so on, the assessment at each new stage may even generate feedback to an earlier stage for possible reassessment of controls.

At each stage of the audit control is measured against a standard or standards. In this Examination process, there is a measureable standard available. It is the Certified Internal Auditor Examination Questions and Suggested Answers booklet, published annually by the Institute. This particular standard can be used in many ways at each stage of the process. Other standards may need to be developed, for example, for "Learning Activities" and "Learning Plan". These latter two, as noted earlier in this paper, are many and may differ with individuals; they may be difficult to measure.

Who is to carry out such audits? An exam candidate could be the internal auditor for others in a study group, a

cooperative arrangement where each person could assume the audit role over a period. A senior or a manager could audit the activities of exam candidates on their staffs. There are many possible arrangements, even a self - audit is possible, but this might be difficult to control.

In order to minimize the problems which might arise when using the internal audit process there is a need to adhere to the Standards for the Professional Practice of Internal Auditing (1978). These standards provide the criteria by which an audit can be evaluated and measured. They also provide the guidelines through which internal auditing excellence can be achieved. The general standards included in the Standards (1978) are Independence, Professional Proficiency, Scope of Work, Performance of Audit Work, and Management of the Internal Auditing Department.

What are the problems which may arise through use of the internal audit process for the above stated purpose. The most obvious to an internal auditor and probably the most serious is the matter of independence, and specifically the question of objectivity. The Standards (1978) under Section 100, Independence state, "Internal auditors should be independent of the activities they audit", and further, "Internal auditors are independent when they can carry out their work freely and objectively.....". Section 120, Objectivity goes on to state "Internal auditors should be objective in performing audits" and further, "Objectivity is

an independent mental attitude which internal auditors should maintain in performing audits".

Maintaining objectivity when auditing others may not present problems. The matter of objectivity for those who choose self-administered study programs can be a more critical problem. Objectivity in the latter case requires; a dedication to the primary problem - passing the examination, a disciplined approach in the application of preparatory procedures, and the highest possible motivation to implement the whole process. Still on the subject of control and mindful of the possible limitations on internal auditors concerning the matter of objectivity, it may be well to recall the words of Drucker (1954) when he wrote, "Self-control means stronger motivation, a desire to do the best rather than just get by." Motivation may be one of the factors that can enhance the chances of achieving objectives.

4.6 The Link to Educational Technology

What has been advocated in the paragraphs above concerns the preparation for a specific exam - the Certified Internal Auditor Examination. The internal auditing approach recommended earlier is a systemic one, a problem-solving approach. Can this also be considered as an educational technology one?

If we examine Mitchell's (1977) definition of educational technology:

Educational technology is an area of study and practice (within Education) concerned with all aspects of the organization of educational systems

and procedures whereby resources are allocated to achieve specified and potentially replicable educational outcomes.

We see it calls for a systemic approach to achieve educational outcomes. Internal auditing is concerned with all aspects of systems and procedures and how they operate to achieve specific goals. Using the internal audit process to achieve a specific outcome on the Certified Internal Auditor Examination seems to fit the aims of educational technology. The principal objective of internal auditing is to assure that control is effective so that objectives can be achieved.

5.0 ~~References~~ & Bibliography

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PERIODICALS

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6.0 Appendices

6.1 Appendix A



THE CERTIFIED INTERNAL AUDITOR PROGRAM

Objectives

The Certified Internal Auditor (CIA) Examination is designed to measure the technical competence of the candidate. This provides a foundation for granting professional recognition and gives direction to all internal auditors who seek to further their professional development. The objectives of the CIA Program, as established by the Board of Directors of The Institute of Internal Auditors, Inc., are:

1. *to support the professional recognition of members of The Institute of Internal Auditors, Inc., and all other internal auditors by*
 - identifying the body of knowledge and the work experience needed to qualify as a professional in the field of internal auditing
 - stimulating and encouraging the professional development of all internal auditors
 - defining the criteria for professional recognition of internal auditors
 - developing an accepted examination program which will measure the candidate's knowledge and ability with respect to the current state of the art of the practice of internal auditing
2. *to achieve universal acceptance, recognition, and professional standing of the certified internal auditor designation*

Attaining the designation "certified internal auditor" will bring internal auditors the deep, personal satisfaction of knowing they have reached a recognized and accepted level of competency in their chosen profession. They will become members of a recognized professional group and receive the benefits accorded to professionals. These benefits include the recognition of their competence by business and professional associates, more rapid career ad-

ancement, and greater acceptance in their role as advisors to management.

The Certified Internal Auditor Program requires higher levels of professional training which are being met by expanding educational programs sponsored by The Institute. Additionally, colleges and universities are introducing courses in internal auditing and related subjects. The Institute of Internal Auditors' CIA Program forms the basic component of a well-rounded professional development program for internal auditors, raising the level of practice for the entire profession.

Certified Internal Auditors wishing to have a current continuing professional development (CPD) listing are required to report progress each year toward completing 100 hours of activity in each three-year period starting January 1, 1982. CPD activity can be in the areas of formal education programs, published writing, oral presentations or specified participation in professional organization activities so long as these contribute to the development or maintenance of the CIA's professional proficiency.

Background

The Institute of Internal Auditors, Inc., is the outgrowth of the belief held by internal auditors that an organization was needed to develop the professional status of internal auditing and provide for the interchange of ideas and information among practicing auditors.

The Institute of Internal Auditors, Inc. was incorporated in November 1941 under the laws of the State of New York. Since then its growth has been steady; today it is the recognized professional organization for internal auditors.

Professional development has always played an important role in The Institute's programs. Area conferences are sponsored by chapters throughout the world; the annual international conference has been held each year since 1941, and the State of the Art and many other specialized conferences are held at least once a year. In addition, IIA sponsors a continuing program of comprehensive seminars and self-study courses for all levels of internal auditors. As a result of these and other excellent programs, The Institute continues making progress, successfully reacting to the constant changes in the profession, and progressively takes the lead in many professional areas.

The first Certified Internal Auditor Examination was held in August 1974. It was offered once a year until 1982, when the present two examinations a year schedule was started.

Scope of the Examination

An important characteristic of any profession is the body of knowledge which is its framework for educating and testing the competence of those who wish to become members of the profession.

The CIA Examination reflects the current state of the art of internal auditing including the following disciplines:

- Auditing concepts, standards, practices, and procedures.

- Internal control and ethics.
- Communications.
- Computer systems and equipment.
- Economics and finance.
- Financial and managerial accounting.
- Legal environment of business.
- Internal auditing administration.
- Organizational behavior and management.
- Quantitative methods for managerial decisions.
- Administrative systems and procedures.

Internal auditors continually face situations requiring practical application of knowledge in the foregoing areas. They must demonstrate good judgment and logical reasoning and be able to communicate their conclusions in clear, concise language. The primary purpose of the examination is to test the candidates' knowledge in these areas. The candidates' ability to organize and present such knowledge is also considered during the grading process.

Preparation and Administration of the Examination

Role of the Board of Regents

The Board of Regents of The Institute of Internal Auditors, Inc., is responsible for administering the CIA Examination. The regents consist of at least nine members selected by The Institute's Board of Directors and appointed for three-year terms. The regents represent diverse areas of the internal auditing profession including industry, government, and academe.

IIA's director of certification and his staff administer the preparation, conduct, and grading of the examination within guidelines established by IIA's Board of Regents and Board of Directors.

Sources of Examination Material

There are several sources of examination material. Specific individuals, selected for their knowledge in certain areas, submit questions according to specifications developed by IIA's certification division staff and approved by the board of regents. Some questions are selected from material voluntarily submitted by academicians, professional auditors, and others. Authors of questions receive honoraria for questions and solutions selected for use by the regents.

Examination Security

All material related to the examination, including its preparation and printing, is secured and controlled by the director of certification, who insures compliance with the security requirements established by the board of regents. When the examination material is received at an examination site, local examination officials safeguard materials according to the regents' guidelines.

Examination Locations

Uniform examinations are given annually on the same dates in major cities throughout the world.

IA chapters recommend appropriate facilities and provide examination officials and other essentials necessary for efficient administration of the examination.

The following are the cities where previous examinations have been offered. Additional sites are established based on the number of applicants in an area. The sites are confirmed approximately three months before the examination.

Albany	Delhi	Los Angeles	Raleigh
Albuquerque	Denver	Louisville	Richmond
Allentown	Des Moines	Lubbock	Roanoke
Anchorage	Detroit	Melbourne	Rochester
Ark-La-Tex	Edmonton	Memphis	St. Louis
Atlanta	El Paso	Miami	Salt Lake City
Austin	Erie	Midland	San Antonio
Bakersfield	Fargo	Milwaukee	San Diego
Baltimore	Fort Wayne	Minneapolis	San Francisco
Birmingham	Greensboro	Montpelier	San Jose
Bloomington, IL	Greenville	Montreal	San Juan
Boise	Halifax	Munich	Seattle
Bombay	Hartford	Nashville	Sioux Falls
Boston	Hong Kong	New Orleans	Spokane
Brussels	Honolulu	New York	Springfield
Buffalo	Houston	North Jersey	Stevens Point
Calgary	Indianapolis	Oklahoma City	Syracuse
Canton, OH	Jackson	Omaha	Tallahassee
Charlotte	Jacksonville	Orange Empire	Tampa
Chattanooga	Juneau	Orlando	Tel Aviv
Chicago	Kalamazoo	Ottawa	Toledo
Cincinnati	Kansas City	Pago Pago	Toronto
Cleveland	Lancaster	Pensacola	Tulsa
Columbia	Lansing	Philadelphia	Vancouver
Columbus, GA	Las Vegas	Phoenix	Washington, D.C.
Columbus, OH	Little Rock	Pittsburgh	Westchester/Fairfield
Dallas	London	Portland, ME	Wichita
		Portland, OR	Winnipeg

Grading the Examination

Grading policy for the examination is the responsibility of the board of regents. The board approves a suggested solution for each question. This model answer is divided into subparts, and each subpart is weighted according to its relative importance. The suggested solution serves as an initial indicator of the most appropriate answer and provides a basis for creating a grading guide that is further refined by the staff, the board of regents and the graders assigned to each question during a preliminary grading process. The staff oversees this initial sample grading and develops guides which are reviewed by a board of regents grading subcommittee before use in the formal or production grading.

The formal grading phase of the examination program is thorough and conducted with great care. Examination graders are carefully selected on the basis of their professional and academic qualifications. Each grader is generally assigned one question. The combination of comprehensive model answers and highly qualified graders assures candidates that they will receive appropriate consideration and maximum credit for their answers.

To maintain quality control, grading supervisors review papers from all graders. Marginal papers, defined as those with grades between 69-74, receive an additional review. Several other internal checks are performed before the grades are finally approved by the Board of regents. For example, supervisors and the director of certification's staff monitor the quality of each grader's performance during the entire grading process. Mechanically graded questions are verified on a sample basis.

The anonymity of the candidates is preserved during the entire grading process. Individual scores are released only to candidates who score below the minimum passing grade of 75. Candidates scoring 75 or higher are told that they passed but are not given their numerical score. The results are mailed to all candidates approximately 90 days after the examination. All examination papers become the property of The Institute of Internal Auditors, Inc., and are not returned to candidates. Grading decisions of the board of regents are final.

The certification division provides an examination review service for unsuccessful candidates. For each part requested, candidates will receive a listing — by question number — of the maximum points possible along with the score actually received. There is a charge of \$5 per part to cover administrative costs. Those desiring this service should send their request in writing to the certification division along with the required fee.

Highest Achievement Award

The Board of Directors of The Institute of Internal Auditors, Inc., established six awards for candidates writing the best examination papers for all four parts of the examination in one attempt.

The candidate submitting the best papers receives the Certified Internal Auditor Examination Highest Achievement Award. This consists of a gold medal, a cash award, a certificate, and an expense-paid trip to IIA's annual international conference. The candidates writing the five next-best examination papers receive Certificates of Excellence.

Careful reading and following the instructions in the next two sections — Requirements for Candidates and Registration and Application — will save the candidate both time and money. Failure to follow these instructions could result in a candidate's being denied the opportunity to sit for the CIA Examination.

Requirements for Candidates

Candidates for the CIA Program must meet educational and experience requirements and agree to abide by the *Certified Internal Auditor Code of Ethics*. To be eligible to take the CIA Examination and receive the CIA designation, candidates must submit satisfactory evidence covering the following qualifications:

Work Experience

The work experience requirement for the designation of certified internal auditor is two years. To satisfy the two-year work experience requirement, work as an internal or external auditor or as an auditor in public accounting is understood to mean the rendering of services such as those customarily performed by a full-time, regularly employed audit staff. Candidates' experience must be attested to by their supervisor, another appropriate member of their organization, or a certified internal auditor. This letter should accompany the registration or be sent later, after the requirement has been met.

Criteria for internal auditing experience equivalents are as follows:

- An advanced academic degree beyond the baccalaureate is considered as equivalent to one year of work experience (one year maximum).
- Auditing experience in public accounting qualifies as work experience in internal auditing.
- Full-time college or university-level teaching in the subject matter of the examination is considered as equivalent to work experience on the basis of two years of teaching equaling one year of internal auditing experience.

An academic degree beyond the baccalaureate must be from an accredited graduate-level program to be considered as one year of work experience. All advanced degrees, regardless of the curricula, are eligible for consideration.

Candidates passing all four parts before completing their experience requirement must have the two years of experience (or equivalent) verified before certification will be granted. The Institute of Internal Auditors, Inc.'s Board of Regents is the final judge of the acceptability of equivalents offered for consideration as work experience.

Letters attesting to a candidate's work experience in internal and/or external auditing should:

- Be typed on the company's letterhead.
- Include the specific dates for which the person was employed in an auditing capacity.
- Specify the position(s) held along with a brief description of duties and responsibilities.
- Contain the signature and title of the candidate's supervisor or another appropriate member of the organization (e.g., director of internal auditing, partner, controller, vice president, or president).

Letters attesting to a candidate's college- or university-level teaching should:

- Be typed on the university's letterhead.
- Specify the courses taught during each semester or quarter.

- Verify that the candidate did have a full-time appointment for each academic year submitted and include specific dates.
- Be signed by the dean of the college of business administration or another appropriate administrative official (e.g., department chairperson, president of the university).

In order for an advanced academic degree beyond the baccalaureate to qualify as one year of experience, an official transcript, written proof of completion of an advanced degree program, or a photocopy of the diploma must be submitted for consideration by the board of regents.

Candidates seeking one-year work-experience equivalency for advanced degrees received outside North America should refer to the "Education" section to determine the procedure to follow.

Education

Candidates Educated in North America

All candidates must hold a baccalaureate or its equivalent from an accredited college-level institution. The board of regents defines baccalaureate as the "degree of bachelor conferred by a university or college." This degree is usually the lowest degree conferred by a four-year college or university in the United States. Most Canadian universities offer the bachelor's degree after three or four years of full-time study in the field of arts and science.

An accredited college or university, as defined by the board of regents, is a four-year degree-granting college or university in the United States (or a three- or four-year degree-granting university in Canada) accredited at the time the registrant's degree was received by virtue of being listed in the *Education-Directory, Colleges & Universities*, published by the National Center for Education Statistics, or the *Directory of Canadian Universities*, published jointly by Statistics Canada and the Association of Universities and Colleges of Canada.

An official transcript or written proof of completion of a degree program must be submitted with the registration or forwarded to The Institute by the university. A copy of the diploma is also acceptable.

Academic qualifications submitted by candidates who have not completed a degree program are evaluated by the board of regents on an individual basis to determine equivalency. The board will consider baccalaureate equivalency questions when the registrant has completed the equivalent of approximately 120 semester hours or 180 quarter hours of degree credits at an accredited college-level institution. Internal auditing work experience may be taken into account when a nondegree candidate has completed more than 90% of the academic hours of credit needed for a degree.

Academic qualifications submitted by nondegree candidates should be explained in sufficient detail to enable the board of regents to determine equivalency. The board is the sole judge of the acceptability of educational attainment offered in lieu of a baccalaureate.

College or university students who are registered full time in the final year of a baccalaureate or graduate degree program are eligible to register for the

CIA Program. A letter from a college official which attests to the full-time status (12 semester hours for undergraduates, 9 semester hours for graduate students) and intended completion date of the degree program should accompany the student registration form. Copies of the forms are available from the certification division. Candidates taking the examination before completing their baccalaureate or advanced degree program must have the degree and required experience verified before certification will be awarded.

Candidates Educated Outside North America

In view of the variations in educational programs and standards throughout the world, academic requirements are stated in terms used and customs followed in the United States of America and Canada. In order to objectively determine whether candidates' academic qualifications are in fact equivalent to a baccalaureate from an accredited college-level institution, all candidates holding degrees granted outside North America *must submit sufficient information* to enable the board of regents to evaluate the course of study and determine whether the degree may be considered equivalent to a baccalaureate. It may be necessary for The Institute to engage a credential evaluation service.

Character References

Each candidate must submit a character reference from a responsible person such as a supervisor, manager, professor, or certified internal auditor. Individuals providing references must have known the candidate for at least three months.

Fees

The fee schedule prescribed by the board of regents is as follows:

Registration fee (on entry to the program)	\$25
Examination fee (per part, per sitting)	\$45

The registration fee is neither refundable nor transferable. If a registrant is denied entrance into the CIA Program, the \$25 registration fee will not be refunded. Therefore, interested persons should read the "Requirements for Candidates" section very carefully before submitting the registration form and fee.

The full examination fee is refundable if written notice of cancellation is received on or before April 1 for the May examination and October 1 for the November examination. *No part of the fee will be refunded if written notice is received after these dates.*

Effective with applications to sit for the May 1983 CIA Examination, an applicant who provides written notice of deferral on or before April 1 for the May examination and October 1 for the November examination may defer fees to the next examination without cost. However, if such notification is received by the certification division after April 1 or October 1, there will be a \$25.00 deferral charge which must be paid before the grade release date. If there is no notice of cancellation and the candidate fails to appear, the candidate is classified as a "no-show" and a penalty fee of \$45.00 will be deducted from fees paid and any remainder will be deferred until the next examination. Fees may

be deferred for one examination period only.

Candidates wishing to transfer from one site to another after April 1 for the May examination and October 1 for the November examination will be required to pay a \$25.00 transfer fee, which must also be received by the grade release date.

Registration and Application (Two-Step Process)

Step One

A completed Certified Internal Auditor Program Registration Form is required for entrance into the CIA Program. All registration documents and fees must be filed with The Institute on or before February 28 for the May examination and August 31 for the November examination. The items of registration which must be filed are as follows:

- The Certified Internal Auditor Program Registration Form.
- An official transcript, written proof of completion of a degree program, or a photocopy of the baccalaureate degree.
- The \$25 registration fee.
- A character-reference statement. (Letters and/or copies of documents attesting to a candidate's completion of the work experience should be submitted as soon as the requirement is met.)

Registration for the CIA Program is required to enter the program only. The candidate must sign the registration form agreeing to abide by the *Certified Internal Auditor Code of Ethics*. Each registrant is responsible for making timely delivery of the required fee and forms. *The Institute cannot guarantee a candidate's right to sit for the examination if the candidate does not meet published deadlines.*

When all requirements are satisfactorily met, the director of certification will notify the candidate of registration approval. Application to take the examination (step two) cannot be made until this approval is received.

Step Two

The candidates must file an application to sit for the examination, together with the applicable examination fee, with The Institute of Internal Auditors, Inc., by March 31 for the May examination and/or September 30 for the November examination. *Candidates must reapply each time they wish to take any part of the examination.*

Each applicant is responsible for making *timely delivery* of the required fee and form. *The Institute cannot guarantee a candidate's right to sit for the examination if the candidate does not meet published deadlines.*

A candidate must initially take at least two parts of the examination but may take three or all four parts. A candidate may reapply to repeat any parts failed by submitting an application and the appropriate fee.

Certified Internal Auditor Examination Application Forms are mailed to all approved candidates about 90 days in advance of each examination.

Each person enrolled in the CIA Program is responsible for making *timely notification in writing* to the director of certification of any change of address.

Eligibility Policy

Effective June 1, 1982, candidates who do not pass all four parts within six successive examinations, starting with the examination in which the candidate first passes a part, will lose credit for any part or parts previously passed. The candidate must then reregister for consideration as a candidate for future examinations.

Registrations accepted in 1979 and later will be valid for a maximum of three years from June 1, 1982, if no part has been passed. Candidates who first pass at least one part of the examination during the three-year period have the next five successive examinations in which to pass all four parts without loss of credit. The same three-year maximum period for passing at least one part applies to all registrations accepted after June 1, 1982.

6.2 Appendix B

CERTIFIED INTERNAL AUDITOR EXAMINATION

Prepared and administered by the Board of Regents of The Institute of Internal Auditors, Inc.

EXAMINATION FOR PART I**PRINCIPLES OF INTERNAL AUDITING**

THURSDAY MAY 13, 1982 — 9:00 A M to 12 00 Noon

Questions	Estimated Time (Minutes)
1-30	45
31	20
32	30
33	15
34	20
35	20
36	15
37	15
	—
	Total 180

The estimated time allowance approximates the relative weight assigned to each question

READ THE FOLLOWING INSTRUCTIONS CAREFULLY

- Place your candidate number on each answer sheet in the space provided and begin each answer on a new sheet.
- Number all answer sheets consecutively. The answer sheet for multiple-choice questions is page 1.
- Arrange your answers in the numerical order of the questions.
- Calculations made to support your answers should be legible, clearly referenced to your answers, and submitted on the answer sheets provided.
- Legible writing and clear exposition will help assure that you receive appropriate credit for your answers.

**FAILURE TO FOLLOW THESE INSTRUCTIONS
MAY ADVERSELY AFFECT THE GRADING OF YOUR ANSWERS**

QUESTIONS 1-30: MULTIPLE CHOICE
ESTIMATED TIME: 45 MINUTES

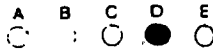
Select a **single** answer which best completes the statement or answers the question. Mark your answer by blackening with a soft lead pencil the appropriate answer space on the answer sheet provided.

SAMPLE QUESTION

In testing for a proper cutoff of purchases of materials, the internal auditor would most likely examine:

- a. Vendor's invoices.
- b. Purchase requisitions.
- c. Purchase orders.
- d. Receiving reports
- e. All of the above

ANSWER SHEET (example)



ANSWER THE FOLLOWING:

1. The IIA scope of work standard includes as an appropriate audit responsibility:
 - a. Determining whether operating objectives and goals established by the management of an operating unit conform with those of the overall organization.
 - b. Determining whether operating objectives and goals are being met.
 - c. Determining whether underlying assumptions made in developing objectives and goals are appropriate.
 - d. Determining whether suitable controls have been incorporated into the operations or programs.
 - e. All of the above.
2. "The directors of internal auditing should coordinate internal and external audit efforts." Which of the following activities is **not** included in this standard?
 - a. Developing a common understanding of audit techniques, methods, and terminology.
 - b. Exchanging audit reports and management letters.
 - c. Obtaining reciprocal approval of annual audit plans.
 - d. Holding periodic meetings to discuss matters of mutual interest.
 - e. Providing access to each other's audit programs and working papers
3. Internal auditors should be objective in performing audits. Which of the following situations clearly violates the IIA standard of objectivity?
 - a. The auditor who reviews accounts receivable worked in that department as a trainee two years ago for three months
 - b. The auditor reviews a department that continues to use procedures recommended by that auditor when the department was established.
 - c. The auditor reviews the same department for two years in succession.
 - d. The auditor reviews a department in which the auditor has the responsibility for cosigning checks
 - e. All of the above.
4. An effective system of internal control:
 - a. Reduces the need for management to review exception reports on a day-to-day basis.
 - b. Eliminates risk and potential loss to the organization.
 - c. Cannot be circumvented by management.
 - d. Is unaffected by changing circumstances and conditions encountered by the organization.
 - e. None of the above.
5. Some internal auditing departments rate each system of internal control they review in order to provide a reasonable level of assurance that these ratings will be valid and accepted. Which of the following conditions/criteria should be met?
 - a. Measurable and objective standards for operating and control systems have been established by management and communicated to appropriate personnel.
 - b. The internal auditor will possess, on a collective basis, high levels of expertise in the controls of most operating areas
 - c. The internal control rating system is an integral part of the performance appraisal and incentive compensation programs for management.
 - d. The organization has a fairly large number of similar entities conducting comparable activities.
 - e. Both a and b above.

6. Internal accounting control primarily comprises the organizational plan, procedures, and records dealing with the reliability of financial records and the:
- Decision processes leading to management's authorization of transactions.
 - Achievement of the organization's objectives.
 - Safeguarding of assets.
 - Detection of fraud.
 - Efficiency of operations.
7. Which of the following statements is not true in regard to independence?
- Independence is not dependent upon auditee cooperation.
 - Independence suggests that auditors will audit without top management's interference.
 - Reporting status should be sufficient to permit the maintenance of objectivity.
 - Organizational status assures independence.
 - An auditor's independence can be constrained by both personal and external conditions.
8. You should use a standard for evaluating an internal auditor's technical proficiency for which of the following areas?
- Ability to gather and document data to support audit findings.
 - The knowledge, skills and disciplines needed to perform audit assignments
 - An objective mental attitude.
 - The ability to plan audit programs and meet schedules.
 - The ability to coordinate the work of the internal auditor with that of the external auditor.
9. Internal controls are intended to provide reasonable assurance that:
- Authorized transactions are processed once and only once.
 - Transaction data are complete and accurate.
 - Transaction processing is correct and appropriate to the circumstances.
 - The output of the processing is delivered only to authorized persons
 - All of the above.
10. Performance of audit follow-up by internal auditors includes:
- Supervision of the corrective action taken.
 - Documentation of corrective action taken or to be taken by operating management.
 - A re-audit of the subject area.
 - A report to the independent external auditors.
 - A report to the audit committee.
11. Who is primarily responsible to see that cost effective controls are implemented in an electronic data processing system?
- Internal audit department director.
 - Electronic data processing audit manager.
 - Audit committee of the board of directors
 - Control group in the electronic data processing department.
 - Operating management
12. A data security system developed for the data base environment should provide assurance that:
- Access is limited to authorized portions of the data base
 - Operations performed on the data are limited to authorized activities
 - Access to the data base is authorized through the data dictionary
 - Accesses are recorded and reviewed by an EDP auditor
 - Both a and b above
13. Data base elements should be defined by
- Application programmers
 - Systems analysts
 - Data base administrator
 - Systems programmer
 - Security specialists
14. Which of the following procedures constitutes a sound segregation of duties with respect to computer operations?
- The programming group authorizes program corrections.
 - Operations personnel make needed changes in the source code
 - The programming group initiates a request for program enhancement
 - Operations personnel control the movement of programs from test program libraries to production libraries.
 - Console operators schedule production

15. Which of the following represents the most effective control over the data dictionary in a data processing environment?
- Changes to existing data elements or additions of new elements are approved by those responsible for the data.
 - Users provide assurance that data does not duplicate or conflict with existing data.
 - Changes are approved by each user of the data.
 - Data administrator establishes duplicate data elements in the data dictionary when different attributes are necessary for the same data element.
 - Each user establishes data element and name standards for the data they will use.
16. An annual summary report of completed audit work submitted to management and the audit committee should:
- Discuss the administrative health of the audit organization
 - Inform management of the scope of proposed audit work for the following year
 - Emphasize the number of deficiency findings discovered by the auditors.
 - Describe the extent to which the audit function has completed its planned program.
 - Explain proposed staffing plan.
17. An adequate charter for the internal auditing function is necessary in order for the director of internal auditing to:
- Justify a salary commensurate with that of other company officials.
 - Have ready access to the president of the company.
 - Be authorized to conduct a review of operations throughout the company.
 - Correct any deficient conditions discovered.
 - Review EDP systems prior to implementation.
18. The long-range audit schedule is considered important because:
- If management cuts back the audit budget, it does so with full knowledge of the particular coverage eliminated.
 - It assures coverage of important areas.
 - It balances current needs against resources.
 - It correlates the long-range goals of the company and future audit programs and staffing.
 - It assures efficient staff utilization.
19. The internal auditor's responsibility for fraud detection is to:
- Conduct the audit with due professional care and skill.
 - Develop each audit program with the objective of fraud detection
 - Assure that EDP controls will detect fraud.
 - Provide periodic assurance to management that fraud will be promptly detected
 - Provide a report to management indicating the extent that fraud has occurred
20. Internal auditing has developed principally because:
- It is required under governmental contract provisions
 - Organizational growth limits management's ability to monitor operations.
 - It can reduce external audit costs
 - There is currently a higher incidence of employee fraud
 - Boards of directors require the assistance of the internal audit function to perform their responsibilities.
21. Which of the following is least likely to be detected by a system of internal control?
- Improperly approved disbursements.
 - Duplicate payments
 - Deviations from standard procedure
 - Fraudulent actions by an employee
 - Fraudulent actions by several employees acting in concert
22. Field supervision of an internal audit includes
- Preparation of audit guides.
 - Development of audit objectives.
 - Responsibility for follow up of audit findings.
 - Quality control for working papers
 - Selection of competent staff for the audit team.
23. Communicating in a constructive tone relative to audit findings involves:
- Reporting only satisfactory performance
 - Emphasizing the opportunities for improvement.
 - Citing by name the individuals involved in deficiency findings
 - Stating the findings in comprehensive detail
 - Avoiding the use of criticism.

24. Suitable criteria for hiring internal auditors, giving due consideration to scope of work and level of responsibility, would not include:
- Adaptability
 - Self-confidence
 - Education
 - Initiative
 - Physical characteristics
25. With respect to the organization's control system, the internal auditor should:
- Accept responsibility for the prevention and detection of fraud
 - Identify risk areas in the organization and schedule review of those areas
 - Be held responsible for compliance with the Foreign Corrupt Practices Act
 - Investigate any suspected fraud in interrogating suspects and witnesses
 - Participate in developing systems to prevent or detect fraud
26. The role of internal auditing within an organization should be established by:
- Generally accepted auditing standards
 - Management and the board of directors
 - Organization manual
 - The external auditors' management letter
 - The director of internal auditing
27. The primary objective of a program for the evaluation of internal auditor performance is to:
- Inform the auditor of strong points, shortcomings, and progress
 - Ensure harmony between the manager and the auditor.
 - Challenge the auditor
 - Provide support for terminations
 - Teach a new auditor the requirements of a job
28. Poor auditor-auditee relationships are likely to result when:
- Findings are not discussed with auditees
 - Credit is not given to auditees for improvements made
 - Auditee has insufficient time to respond to audit findings
 - Insignificant audit findings are emphasized in the audit report
 - All of the above
29. Which of the following activities is prescribed by the *Standards for the Professional Practice of Internal Auditing*?
- Designing and implementing operating systems.
 - Setting operating standards to measure the efficient use of resources
 - Establishing company objectives and goals
 - Determining whether corrective action has been taken
 - Establishing control systems designed to ensure compliance with applicable laws and regulations.
30. A major objective of internal auditing is to assist management in the discharge of its responsibilities and the exercise of its duties by providing services such as:
- Augmenting the work of the accounting organization to make statements more meaningful.
 - Ascertaining the extent of compliance with established policies and procedures
 - Determining if assets are adequately safeguarded
 - Identifying the financial and operational reports provided to management
 - Evaluating operating staff members' capabilities

QUESTIONS 31-37: ESSAY

31. Estimated Time: 20 Minutes

You, as Director of Internal Auditing of Altamonte Corporation, are considering alternative ways for your department to comply with the requirements for external review of your audit operation as provided in the *Standards for the Professional Practice of Internal Auditing*

Required: Identify the advantages and disadvantages of having these reviews of your operation conducted by each of the following parties.

- The company's external auditors
- An ad hoc committee comprised of managers of the Altamonte Corporation
- A team of internal auditors comprised of individuals employed by another company

32. Estimated Time: 30 Minutes

You have recently been hired as director of internal auditing at Research Institute, a prestigious "think tank" employing 2,000 persons. The organization has not had an internal auditing function. The president, who hired you, was instructed by the Board of Directors to create that function. He is not sure whether you should report to him, to the executive vice president — administration, or to the vice president — finance. In fact he is not entirely clear as to what your role should be. One of the president's first instructions to you was: "Draft what you consider to be an ideal charter for your operation. I'll take it to the Board and do my best to get you all the support you need."

Required:

Draft a document entitled "Internal Auditing Department — Statement of Purpose, Authority and Responsibility." Be sure to describe the scope of audit work you want to establish, the authority you will need, and the responsibilities you expect to assume.

Note: You will be expected to reflect some knowledge of model documents available in the literature of internal auditing. You will be graded upon organization of your answer as well as substance, so draft the document carefully.

33. Estimated Time: 15 Minutes

You are director of internal auditing for United Enterprises. The chief executive officer sends you the following message: "The Board of Directors has decided to establish an audit committee comprised of outside directors. The chairman of the Board of Directors wants to meet with you and me to brainstorm the implications of this action. He suggests that at our first meeting we address ourselves to three questions. They are:

- a. What functions do audit committees usually perform?
- b. What should audit committees discuss at their meetings?
- c. What sort of interface or relationship should be established between the director of internal auditing and the audit committee—assuming that you will continue to report directly to me."

Required:

Identify and respond to each of the three questions asked by the chairman.

34. Estimated Time 20 Minutes

In a recent management letter, the external auditors for Holten Services, Inc questioned the effectiveness of the internal auditing department. Management was concerned and retained a retired internal auditing practitioner to review the department's operations. The review revealed that:

1. Several of the company's internal auditors have relatives or close friends who are employed by Holten in various operating positions. The director of internal auditing was unaware of some of these relationships. The relationships often were not considered when assigning audit personnel, resulting in many instances when an auditor's judgment could have easily been compromised.
2. The director of internal auditing requires his employees to work in Holten's operations for at least one year prior to joining the audit staff so as to give the staff the insight it needs to perform effective audits.
3. Whenever possible, the director arranges with line managers for a temporary exchange of their operating staff for auditing staff. The director has discovered that operating personnel can perform more efficient audits of the units from which they are borrowed.
4. To promote consistency and continuity in audits, lead auditors are required to review the same activities for at least five consecutive years. This strategy has virtually eliminated auditee complaints about the auditors not understanding the nature and objectives of the unit's activities.
5. To improve audit staff morale, the director enriches the jobs of his employees by giving them more responsibility for audit reporting. He never challenges the information contained in the audit reports. In fact, he seldom reviews them or the supporting documentation.

Required:

For each of the five observations listed above, state whether the condition is a violation of one of the specific guidelines within the objectivity standard. Justify your answers.

35. Estimated Time: 20 Minutes.

Five financial control objectives which should be achieved relative to the acquisition of goods and services are listed below.

- a. The expenditure bears a reasonable relationship to the requirements of the business.
- b. Quantities or volumes purchased are reasonable and consistent with needs.
- c. Prices and terms of the purchase are consistent with written agreements.
- d. Goods or services are received.
- e. Proper documentary evidence backs up the transaction.

Required:

For each of the financial control objectives listed above, describe two control techniques which can be used to achieve the objective.

36. Estimated Time: 15 Minutes.

You are the director of internal auditing for B Corporation. During the course of a recent audit of one of B Corporation's overseas divisions, one of your auditors reviewed the disbursements from an overseas bank account. The auditor found that several large check disbursements had been made to a numbered bank account in violation of corporate policy. The checks were signed by the chief executive officer of B Corporation. You brought this matter to the attention of the chief executive officer of B Corporation who explained that the checks were written to pay B Corporation's consultant. The chief executive informed you that he discussed the matter with B's attorneys and B's audit committee. He told you to "forget about it" because (1) everyone knows about it, and (2) such consultant payments are illegal in the country in which they were made.

Required:

- a. Discuss the articles from the CIA Code of Ethics that deal specifically with the situation above.
- b. Discuss the relevant Standards for the Professional Practice of Internal Auditing standards that deal specifically with the situation.

37. Estimated Time: 15 Minutes

Jodan Manufacturing Company has about 1,000 production employees who are paid hourly wage rates. The internal auditors examined records maintained by the personnel department to determine the basis of deductions from payroll. They found that no system existed for maintenance of current and proper payroll deduction authorizations in personnel files. In their sample of fifty employees, the auditors found six instances where personnel files failed to contain proper payroll deduction authorizations signed by employees. The internal auditors promptly reported their findings. In response, the personnel manager had the six employees sign appropriate authorization forms for payroll deductions. He then reported to the internal auditors that he had thereby corrected the deficient condition.

Required:

1. Discuss the extent to which internal auditors are responsible for follow-up to determine that appropriate corrective action is taken by management on reported audit findings.
2. What criteria should the internal auditor consider in judging the propriety of corrective action?
3. Assess the adequacy of the personnel manager's remedial actions according to the specified criteria. (Your discussion need not focus on specific control procedures.)

END OF PART I

CERTIFIED INTERNAL AUDITOR EXAMINATION

Prepared and administered by the Board of Regents of The Institute of Internal Auditors, Inc.

EXAMINATION FOR PART II

INTERNAL AUDITING TECHNIQUES

THURSDAY, MAY 13, 1982 — 2:00 P.M. to 5:00 P.M.

Questions	Estimated Time (Minutes)
1-40	80
41	10
42	25
43	15
44	15
45	10
46	5
47	10
48	10
	Total 180

The estimated time allowance approximates the relative weight assigned to each question

READ THE FOLLOWING INSTRUCTIONS CAREFULLY

- Place your candidate number on each answer sheet in the space provided and begin each answer on a new sheet.
- Number all answers consecutively. The answer sheet for multiple-choice questions is page 1.
- Arrange your answers in the numerical order of the questions.
- Calculations made to support your answers should be legible, clearly referenced to your answers, and submitted on the answer sheets provided.
- Legible writing and clear exposition will help assure that you receive appropriate credit for your answers.

**FAILURE TO FOLLOW THESE INSTRUCTIONS
MAY ADVERSELY AFFECT THE GRADING OF YOUR ANSWERS**

**QUESTIONS 1-40: MULTIPLE CHOICE
ESTIMATED TIME: 90 MINUTES**

Select a single answer which best completes the statement or answers the question. Mark your answer by blackening with a soft lead pencil the appropriate answer space on the answer sheet provided.

SAMPLE QUESTION

Which of the following may be scheduled in production planning by the use of learning curves?

- a. Labor assignments.
- b. Purchases of materials.
- c. Subassembly production.
- d. Delivery dates of finished products.
- e. All of the above.

ANSWER SHEET (example)

A B C D E

ANSWER THE FOLLOWING:

1. The scope statement in a written audit report should:
 - a. Be combined with the findings.
 - b. Identify any limitations imposed.
 - c. Identify the audit techniques used.
 - d. Be combined with the introduction.
 - e. Identify the auditor's sampling methodology.
2. An audit report may be considered deficient if:
 - a. Major and minor findings are not differentiated.
 - b. The auditor relied on the work of others without disclosing the lack of personal review.
 - c. No statement of scope is included.
 - d. Exceptions reported are not related to organizational goals.
 - e. Any one of the above is present
3. Which of the following audit steps would not normally be undertaken by a bank's internal auditor when reviewing commercial loan files?
 - a. Review notes for completeness.
 - b. Ascertain approval by an authorized loan officer.
 - c. Review loan officer comments on contacts with the customer.
 - d. Review current customer financial statements.
 - e. Obtain and review credit rating reports from an independent credit rating firm.
4. In evaluating the procedures of the claims payment department of a casualty insurance company, the audit step least likely to be included in the audit program is:
 - a. Determine that the payment was within the terms of coverage.
 - b. Review the claims documentation.
 - c. Inspect the site to substantiate the extent of the loss claimed.
 - d. Determine that the claimants' payments on their policies are current.
 - e. Confirm receipt of the claims payment with the policyholder.
5. With respect to reporting audit results, which of the following directives is inappropriate?
 - a. Provide interim reports on an oral basis.
 - b. Report satisfactory performance where possible.
 - c. Include the auditor's opinion.
 - d. Include the auditee's opinion.
 - e. Exclude discussion of problem areas that have been corrected.
6. The primary purpose of issuing an interim or progress report while an audit is in progress is to:
 - a. Permit operations management to act on certain findings immediately.
 - b. Inform auditee management and their supervisors of findings as soon as practicable.
 - c. Immediately present a comprehensive set of findings and recommendations with authoritative support cited.
 - d. Describe the scope of the audit.
 - e. Set the stage for the final report

7. An audit of the revenues generated by the permit and inspection division of the city's building department has just been concluded. A draft audit report indicates that a major updating of the computerized billing system is needed to ensure that fees are billed in accordance with the recently revised city building code. With whom should the draft audit report be reviewed?
- Superintendent, Building Department
 - City Comptroller
 - Director of Data Processing
 - City Treasurer
 - All of the above
8. A well-designed internal control questionnaire should:
- Elicit "yes" or "no" responses rather than narrative responses.
 - Be a sufficient source of data for the evaluation of internal controls.
 - Identify internal control system strengths and weaknesses.
 - Be organized by department.
 - Be independent of the objectives of the audit.
9. An auditor made several recommendations to improve utilization of plant personnel in a large manufacturing company. Which of the following recommendations would probably have the opposite effect of that intended?
- Use applicable time study data to specify the cost/job relationship.
 - Eliminate supervision of line personnel
 - Rotate job responsibilities for repetitious tasks.
 - Develop detailed job performance standards.
 - Use a time clock to document the hours worked by employees.
10. When auditing the controls over raw material quality, it would not be useful to review and evaluate:
- The fire protection arrangements of the materials storage area.
 - The receiving procedures.
 - The purchasing procedures.
 - The procedures for handling materials.
 - Policies for recognizing and disposing of damaged and obsolete materials.
11. The internal auditor's primary concern with the auditee's programmer writing a program to age inventory would be:
- The auditor's programming expertise.
 - Loss of independence.
 - Saving valuable audit time.
 - Limited use of the program.
 - Programmer's access to confidential information.
12. When an EDP auditor performs compliance tests on an inventory file containing over 20,000 line items, that auditor can maintain independence and perform most efficiently by:
- Employing an independent contractor to write an extraction program.
 - Using a generalized audit software program.
 - Obtaining a printout of the entire file and then selecting each item.
 - Using the systems department's programmer to write an extraction program.
 - Asking the console operator to print every item that cost more than \$100.
13. When making predictions of gross sales, an internal auditor would most likely use:
- Regression analysis.
 - Linear programming.
 - Sensitivity analysis.
 - Monte Carlo method.
 - Stochastic methods.
14. An internal auditor is using variables estimation as the statistical sampling technique to estimate the monetary value of a large inventory of parts. Given a sample standard deviation of \$400, a sample size of 400, and a 95 percent two-tail confidence level, what precision can the auditor assign to his estimate of the mean dollar value of a part?
- ±\$39
 - ±\$ 2
 - ±\$52
 - ±\$ 4
 - ±\$20
15. A test of 200 invoices randomly selected by the internal auditor revealed 35 which had not been approved for payment. At the 95 percent confidence level, what precision can be assigned?
- 6.9 percent
 - 5.3 percent
 - 9.1 percent
 - 3.5 percent
 - 1.7 percent

16. An internal auditor plans to sample an insurance claims settlement file to ascertain evidence of fraudulent claims. The auditor draws a sample of claims for auditing which will provide a specified confidence level of detecting at least one fraudulent claim if a certain rate of fraudulent claims actually exists in the population. This type of sampling plan is known as:
- Acceptance sampling.
 - Stratified sampling.
 - Discovery sampling.
 - Chi-square sampling.
 - Variables sampling.
17. An auditor draws a random sample of invoices and computes the mean invoice amount. The auditor then computes the standard error of the mean. This information can be used to:
- Measure the variability of a specific item within the sample.
 - Determine the standard deviation of the sample.
 - Measure the variability that exists among all the possible invoice samples of the same size.
 - Perform difference estimation and avoid a large sample.
 - Compute the results of a variable sample through the use of standard tables.
18. An auditor's statistical sample drawn from a population of invoices indicates a mean value of \$150 and a sampling precision of $\pm \$30$ at a 95 percent confidence level. Which of the following statements is a correct interpretation of this sample data?
- There is a 95 percent probability that the true population mean is \$150.
 - There is a 95 percent probability that the true population mean falls in the range of \$135 to \$165.
 - In repeated sampling, about 95 percent of the intervals with precision $\pm \$30$ around the sample mean will contain the true population mean.
 - In repeated sampling, the true population mean will fall in the precision range of \$120 to \$180 about 95 percent of the time.
 - In repeated sampling, the point estimate of the true population mean will be \$150 about 95 percent of the time.
19. Clerks A, B, and C process 50 percent, 20 percent, and 30 percent of the sales orders, respectively. The percentage of errors made in processing a sales order by clerks A, B, and C are 2 percent, 5 percent, and 10 percent, respectively. A sales order is audited and found to be in error. What is the probability that this invoice was processed by clerk C?
- .30
 - .60
 - .10
 - .03
 - None of the above.
20. An internal auditor determines that a sample size of 250 units is appropriate. There is then an observed sample standard deviation of \$386, and a 99 percent confidence interval using a two-tailed test. The sampling precision is ± 63 . What sampling precision would be achieved with a 95 percent, two-sided confidence interval?
- ± 40.3
 - ± 63.0
 - ± 34.5
 - ± 83.7
 - ± 47.8
21. An internal auditor is reviewing the budget of a manufacturing division. The division has estimated its expected profit for next year on the basis of the probability-rated profit forecast shown below:
- | Volume (Units) | Probability | Profit or (Loss) |
|----------------|-------------|------------------|
| 10,000 | 15% | \$(20,000) |
| 20,000 | 24% | (5,000) |
| 30,000 | 42% | 10,000 |
| 40,000 | 14% | 25,000 |
| 50,000 | 5% | 40,000 |
| | 100% | |
- What is the expected profit for the division based on the above data?
- 10,000
 - 27,000
 - 13,900
 - 5,500
 - 50,000

22. A company has developed a learning (improvement) curve for one of its newer processes from its accounting and production records. Management asked internal audit to review the curve. Which of the following events would tend to mitigate the effects of the learning curve?

- a. Labor costs incurred for overtime hours are charged to an overhead account.
- b. The number of pre-assembled purchased parts used exceeded the plan.
- c. The number of skilled, higher-paid workers used in production exceeded the plan.
- d. Newly developed processing equipment with improved operating characteristics is used.
- e. All of the above.

23. An internal auditor developed the data below for a linear programming model for its southern plant.

	Product		
	X ₁	X ₂	X ₃
Selling price.....	35	90	20
Costs:			
Material.....	15	30	10
Labor.....	15	30	3
Variable Overhead.....	2	5	1
Fixed Overhead*.....	5	10	1
Profit/(loss) per unit.....	(2)	15	5

*Allocated to products on the basis of labor hours

Based on the data above, which of the following should the internal auditor select as the correct function to maximize profit from that plant?

- a. $35X_1 + 90X_2 + 20X_3$
- b. $-2X_1 + 15X_2 + 5X_3$
- c. $15X_2 + 5X_3$
- d. $3X_1 + 25X_2 + 6X_3$
- e. $5X_1 + 30X_2 + 7X_3$

24. Which of the following tasks could not be performed when using a generalized audit software package?

- a. Recalculations of numbers.
- b. Retracing of transactions through calculation and classification operations
- c. Scanning for unusual items.
- d. Computation of operating ratios.
- e. Physical counts.

25. When auditing a stand-alone minicomputer as compared to a large-scale computersystem, which of the following statements affect the preparation of the audit program?

- a. The internal auditor will have to perform more substantive tests.
- b. The internal auditor will have to write a tailored program to access data.
- c. The internal auditor will have to use different audit techniques than those used in a large computer configuration.
- d. The internal auditor would expect to find different systems controls than those found with a larger computer.
- e. The internal auditor will find it necessary to audit around the computer.

26. When auditing computer security, the internal auditor would usually not:

- a. Perform compliance tests.
- b. Review contingency procedures
- c. Perform substantive tests.
- d. Review personnel practices and policies.
- e. Review documentation standards.

27. Red Company assigns a 10-digit number to each employee for identification purposes. During the computerized payroll process, a clerk incorrectly entered a nine-digit number for one employee. Which of the following controls would be likely to detect this?

- a. Overflow check.
- b. Completeness check.
- c. Sequence check
- d. Validity check
- e. Parity check

28. One technique for testing computer application program controls is called the "test data method". The purpose of this test is to:

- a. Run data twice through the old and new systems to identify unexpected differences
- b. Select and record data for subsequent analysis.
- c. Provide the documentation necessary to explain the system of control.
- d. Verify the processing logic and controls.
- e. Show the trail of instructions executed through an application.

29. The first step in planning audit activities in a computer environment is to:
- Develop a detailed program.
 - List the essential internal controls.
 - Obtain detailed information from management about the areas of concern.
 - Select the audit techniques to be employed.
 - Determine the objectives of the audit.
30. Which of the following disaster recovery measures listed below is likely to be effective in getting an EDP system to operate promptly after destruction of the EDP installation?
- ~~Store the documented recovery plan in the computer facility.~~
 - Maintain comparable backup physical facilities on a standby basis.
 - Keep backup master and transaction files available in the computer facility.
 - Keep the previous version of the operating system available.
 - Store current versions of programs and program documentation in an off-premises location.
31. A procedure for an internal auditor to ascertain whether retail inventory thefts are occurring is to:
- Review the year-end cutoff of purchases and sales transactions.
 - Observe the taking of physical inventory and make test counts.
 - Test the pricing of merchandise inventory.
 - Investigate significant differences between physical inventory results and retail inventory estimates.
 - Inquire of knowledgeable personnel.
32. Of the procedures listed, which is the most likely to detect kiting?
- Compare the detail of cash receipts (log listings) to the cash receipts journal, accounts receivable postings, and deposit slips.
 - Investigate checks that have been outstanding for long periods.
 - Account for bank transfers made during a few days before and after selected dates.
 - Confirm account receivable balances as of a cutoff date.
 - Count cash on hand.
33. A preliminary or entrance conference with the auditee is a useful step in avoiding misunderstandings. Which of the following items is usually not covered in a preliminary conference?
- Nature, purpose, and scope of the audit.
 - Special problems known to be relevant to the audit.
 - Extent to which the internal auditor will need assistance and cooperation from the organization's personnel.
 - Condition of accounting records and other data sources which may affect the scope of the audit and difficulty of completion.
 - Audit program to be followed.
34. Indicate which of the following is not appropriate in an internal auditor's interim report.
- A statement from the auditee providing reactions to the findings.
 - Specification of the scope of the review.
 - A listing of the audit procedures completed to date.
 - A statement that the interim report is tentative and that additional findings are possible.
 - Recommendations for immediate action.
35. In an audit of a bank, the internal auditor may decide to verify many individual depositors' account balances through the use of negative confirmation requests. Negative confirmations are considered appropriate when:
- Internal control is considered weak.
 - A large number of small balances are involved.
 - The auditor believes the persons receiving the confirmation requests are unlikely to give them due consideration.
 - There is reason to believe that there may be a substantial number of accounts with inaccuracies or irregularities.
 - The extent of other auditing procedures applied to the depositor's accounts is minimal.

36. During the 1981 audit of the local county's purchasing department, the state auditor's office found and reported to the county commissioners a lack of documentation for purchases. During the 1982 audit, the state auditor's office wished to determine if steps were taken to rectify the documentation deficiency. Identify which of the following audit procedures is most likely to disclose the failure to correct the deficiency.
- Review the purchasing procedures manual maintained in the purchasing department.
 - Examine receiving department records to be sure that prenumbered receiving reports are issued for goods and services received.
 - Ask departments requesting goods and services if they are receiving ordered items.
 - Review a sample of requisitions to determine if appropriate approvals to purchase were entered.
 - Select a sample of disbursement vouchers to see if there are corresponding purchase requisitions, purchase orders and receiving reports.
37. During the 1982 audit, the internal auditor found that 1981 audit deficiency findings had not been acted upon with respect to receiving department procedures. What would be the most appropriate action for the auditor to take?
- Instruct the head of the receiving department to adopt new receiving procedures.
 - Direct the plant manager to adopt new receiving procedures.
 - Ignore the situation since it had been commented on last year.
 - Repeat the comment in the 1982 audit report and indicate that no changes have been made despite the inclusion of the comment in the 1981 report.
 - Report the finding immediately to the vice-president of manufacturing.
38. During the audit of the Third National Bank, the internal auditor found several serious deficiencies in the commercial loan files. After the internal auditor informed the bank's chief loan officer of this situation, the commercial loan department attempted to remedy the deficiencies. Which would be the appropriate follow-up procedure for the internal auditor to undertake?
- Review the corrections during next year's audit.
 - Ask the chief loan officer to send a letter within 60 days to the internal auditor indicating that the corrections have been made.
 - Ask the chief loan officer to send a letter within 60 days to the chief executive officer indicating that the corrections have been made.
 - Stop by the loan department to ask if the corrections were properly made.
 - Conduct a follow-up audit within a short period of time.
39. Internal audit reports can be structured to motivate management to correct deficiencies. Which of the following report writing techniques is most likely to be effective?
- List the deficiencies found so as to provide an easy-to-follow check-list.
 - Suggest improvements to the currently used procedures after indicating the audit findings.
 - Point out the procedural inadequacies and resulting improprieties in specific terms.
 - Recommend changes and state the punitive measures that will follow if the recommendations are not implemented.
 - Direct that the corrective action be taken.
40. Which of the following techniques should the internal auditor use for obtaining evidence of inefficiencies related to personality conflicts?
- Interview employees to obtain opinions as to the productivity of peers.
 - Invite employees to sign and return questionnaires identifying causes of inefficient operations.
 - Discuss possible personality conflicts with the leaders of the informal organizations.
 - Interview selected individuals as to the causes of inefficiencies.
 - Ask suspected workers to identify existing intradepartment personality conflicts that cause inefficiencies.

QUESTIONS 41-48: ESSAY**41. Estimated Time: 10 Minutes**

A large corporation produces and markets brand name food products. A senior auditor has been asked to devise an audit program to test the effectiveness of a major advertising campaign.

Required:

List the audit steps to be included in the audit program.

42. Estimated Time: 25 Minutes

The audit committee of Jones, Inc. has asked the director of internal auditing about the concept of "systems development auditing." They are specifically interested in:

- (1) an operational audit of the systems development process, and
- (2) an audit of the adequacy of the internal controls in a new system

Required:

- A. Define the term "operational audit of the systems development process."
- B. Identify the major audit objectives associated with an operational audit of the systems development process
- C. State and briefly describe the more important auditing procedures the auditor would perform while conducting an operational audit of the systems development process.

43. Estimated Time: 15 Minutes

Sellmore, Inc. is a retail department store. To facilitate customer shopping, the store issues credit cards to customers who meet the credit standards. These standards are set by the controller, who is the individual who grants credit. To encourage sales, credit limits are not imposed until a payment is more than 90 days past due. It is Sellmore's policy to grant a credit card only after a credit check. However, the chief accounts receivable bookkeeper has the authority to waive a credit check if it appears the delay caused by such a credit check may deter or defer a large sale. In recent years Sellmore's management has put emphasis on telephone sales. If a non-credit cardholder calls in a sale with a retail value of more than \$100, the telephone operator checks with the department manager from which the merchandise is being ordered. The department manager has the authority in such instances to authorize the granting of credit.

Accounts receivable are reviewed every year by the chief accounts receivable bookkeeper. Any accounts more than six months in arrears are written off and the customer's account discontinued.

Required:

The internal auditor is reviewing the company's procedures for controlling credit and receivables.

1. Identify five deficiencies that exist in Sellmore Inc's credit granting procedures.
2. Recommend procedures that may be utilized to overcome the deficiencies mentioned in requirement (1) above.

44. Estimated Time: 15 Minutes

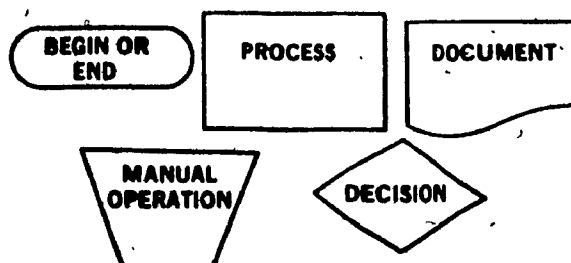
Orange Corp., a high technology company, is concerned with the fact that some parts have been ordered and not used quickly enough to avoid obsolescence. The auditor observed the following procedures for recording raw materials and transferring to work-in process:

- Upon receipt of raw materials by stores, the storekeeper prepares a stock-in report with part number and quantities and sends a copy to accounting.
- Accounting matches the stock-in report with receiving reports and posts the perpetual inventory records using standard costs.
- Raw materials requisitions, which show part number and quantity, are prepared by manufacturing personnel and approved by the supervisor of manufacturing, who is responsible for job scheduling. A copy of the requisition is sent to accounting.
- Accounting reviews the requisitions for completeness and transfers the cost from raw materials inventory to work-in-process on a monthly basis.

Required:

- A) Prepare a flowchart which describes the current process in the accounting department.

Use the following symbols only:



- B) Indicate how the data available is to be used to provide monthly reports to management on projected obsolescence.

45. Estimated Time: 10 Minutes

Statistical sampling techniques are employed by internal auditors in many situations. There are certain basic steps that are consistently followed in sampling regardless of the assignment.

Required:

Describe those steps which culminate in the forming of an audit opinion.

46. Estimated Time: 5 Minutes**Required:**

On a separate page, write the numbers 1 through 6 representing the six terms listed below. Beside each number write the letter corresponding to the appropriate definition for the term.

TERM

- 1 Echo check
- 2 Throughput
- 3 Checkpoint
- 4 Multiprocessing
- 5 Default option
- 6 Library routine

DEFINITION

- a. Computer program that accepts instructions in symbolic code and produces machine language instructions.
- b. A time during processing when a record is made of the status of all the contents of the computer registers and main storage to minimize restart efforts should a failure occur.
- c. Simultaneous operation of more than one set of processing circuitry within a single computer.
- d. Automatic utilization of a predetermined value in situations where input transactions have certain values left blank.
- e. A test for the accuracy of data transfer by retransmitting the data received to their source and comparing them to the original.
- f. Processing two or more application programs by interweaving the execution of individual instructions.
- g. Standard set of program instructions maintained in on-line storage that may be called in and processed by other programs.
- h. Useful work performed by a computer system during a period of time.

47. Estimated Time: 10 Minutes

A petrochemical manufacturer uses a standard process cost-accounting system. The internal auditor is reviewing significant inventory variances that occurred during the first six months of the company's fiscal year.

Required:

1. Should the auditor restrict the investigation to significant unfavorable variances? Explain the reason for your answer.
2. What procedures should the auditor apply in the investigation of significant inventory variances?

48. Estimated Time: 10 Minutes

The internal auditor is testing internal controls over the recording of payables for a manufacturing organization. The internal auditor has examined 60 unpaid vouchers entered in the voucher register during the week following the fiscal year end. Five material items were found that should have been recorded as of year-end. This finding led the internal auditor to the tentative conclusion that the system was not recording material accounts payable in the appropriate year.

Required:

List the additional audit procedures for the internal auditor to follow to determine if the system is recording material accounts in the appropriate year.

END OF PART II

CERTIFIED INTERNAL AUDITOR EXAMINATION

Prepared and administered by the Board of Regents of The Institute of Internal Auditors, Inc.

EXAMINATION FOR PART III PRINCIPLES OF MANAGEMENT

FRIDAY, MAY 14, 1982 — 9:00 A M to 12:00 Noon

Questions	Estimated Time (Minutes)
1-30	45
31	15
32	15
33	15
34	10
35	10
36	10
37	15
38	15
39	15
40	15
	Total 180

The estimated time allowance approximates the relative weight assigned to each question

READ THE FOLLOWING INSTRUCTIONS CAREFULLY

- Place your candidate number on each answer sheet in the space provided and begin each answer on a new sheet
- Number all answer sheets consecutively. The answer sheet for multiple-choice questions is page 1.
- Arrange your answers in the numerical order of the questions.
- Calculations made to support your answers should be legible, clearly referenced to your answers, and submitted on the answer sheets provided
- Legible writing and clear exposition will help assure that you receive appropriate credit for your answers

**FAILURE TO FOLLOW THESE INSTRUCTIONS
MAY ADVERSELY AFFECT THE GRADING OF YOUR ANSWERS**

**QUESTIONS 1-30: MULTIPLE CHOICE
ESTIMATED TIME: 45 MINUTES**

Select a single answer which best completes the statement or answers the question. Mark your answer by blackening with a soft lead pencil the appropriate answer space on the answer sheet provided.

SAMPLE QUESTION

A subordinate's acceptance of an obligation to perform a definite task is known as:

- a. Accountability
- b. Authority.
- c. Responsibility
- d. Controlling.
- e. Directing.

ANSWER SHEET (example)

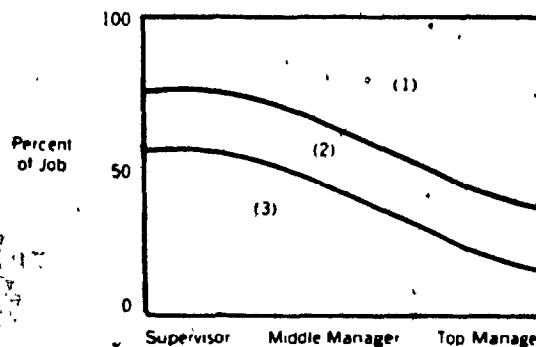
A
 B
 C
 D
 E

ANSWER THE FOLLOWING:

1. In general, which of the following is true in regard to the manner in which managerial activities vary according to a person's level within the organizational hierarchy?
 - a. Top managers spend substantially more time on human relations than do first-line supervisors
 - b. Middle managers spend more time developing policy than do top managers and first-line supervisors
 - c. First line supervisors spend more time on planning than top managers
 - d. Top managers spend more time directing than first line supervisors
 - e. Top managers spend more time on planning than first line supervisors
2. Which of the following could benefit from the contingency approach to organizational design?
 - a. A manufacturer of semiconductors
 - b. A market research firm
 - c. A book publisher
 - d. An investment bank
 - e. All of the above
3. A comprehensive management plan comprises a number of elements which follow a logical time sequence. Which of the following partial lists is in the correct sequence?
 - a. Strategy, program, procedure, budget, rule
 - b. Program, strategy, objective, budget, rule
 - c. Strategy, policy, program, budget, procedure.
 - d. Budget, policy, strategy, objective, procedure
 - e. Plan, policy, procedure, budget, rule
4. The area of employee morale is a difficult one for managers to control. This is true because morale problems are:
 - a. Not really significant to top management
 - b. Difficult to measure
 - c. Not goal related
 - d. A reflection of power relationships
 - e. Difficult to predict
5. A machine shop supervisor redesigns the job description for machine operators. Previously, only specialists did machine setups. Now each operator has the option of doing his own machine setup as part of his regular shift. This is an example of
 - a. Division of work
 - b. Job enlargement
 - c. Job enrichment
 - d. Increased job specialization
 - e. None of the above
6. Certain activities involved in management of human resources are listed below. Which of these is least important?
 - a. Selecting media for attracting applicants
 - b. Selecting applicants for employment.
 - c. Arranging for training of employees
 - d. Appraising performance of employees
 - e. Paying employees in recognition of their performance
7. In planning for an organization's future human resource needs, management should perform a "human resources audit." The initial step in a human resources audit is to
 - a. Evaluate the market for technical and managerial personnel
 - b. Evaluate succession planning
 - c. Establish training requirements
 - d. Identify and assess present personnel
 - e. Recommend development of recruiting targets

8. The extent of influence that a manager has over subordinates is a function of
- The manager's control over desired rewards
 - The degree of conformance with the subordinate's expectations
 - The level of the manager's status acquired off the job
 - The manager's technical expertise
 - All of the above
9. According to the contingency approach to leadership a manager should
- Determine the leadership style best suited to his or her own personality and stick to it
 - Develop a democratic permissive leadership style consistent with McGregor's Theory Y assumptions
 - Adopt a leadership style based upon a diagnosis of the situation
 - Use the leadership style practiced by the boss
 - Avoid too much interaction with subordinates
10. There seems to be a very close relationship between individual needs, wants, motives and individual behavior. Which of the following concerning motivation and human behavior is false?
- The same motive can cause different behavior in two different people
 - The same behavior in two different people can result from different motives
 - Familiarity with an individual's behavior pattern can provide insight into the motivation for specific actions
 - Motives are important energizing forces within an individual
 - Need satisfaction is not necessarily the starting point of motivation
11. In some organizations, first-line supervisors withhold or alter unfavorable information which they do not want known by higher management. This selective withholding of information is widely known as
- Selective reception
 - Filtering
 - Regulating information flow
 - Redundancy reduction
 - Behavior modification
12. "Every month this year the boss has reprimanded me for not controlling my department's unfavorable labor rate variance. It's April now and I've had it," laments the supervisor of a company where employees are represented by a powerful union. What is the most likely explanation for the supervisor's resentment?
- The supervisor cannot take criticism positively
 - The supervisor cannot control the labor rate
 - The labor rate standard is too high
 - The labor rate variance is not significant
 - The supervisor has little confidence in the standard cost system
13. Which of the following statements concerning strategic planning is least correct?
- Strategic planning
- Occurs at higher levels of management
 - Involves a longer period of time than does tactical planning
 - Can be less detailed than tactical planning
 - Would be more likely to take into account major national economic shifts
 - Is generally more specific than tactical planning
14. The element of the planning process which best allows managers to monitor how well their organization is proceeding toward its goal is
- Performance standards
 - Policies
 - Strategic Plans
 - Rules
 - Operating Procedures
15. Planning is not likely to be
- Concerned with future implications of current decisions
 - A process by which it is decided what an organization's goals are and how they are to be achieved
 - Necessary for effective control
 - The responsibility of only the top managers in an organization
 - Essential in all organizations
16. Which of the following is not a characteristic of bureaucracy?
- Clear hierarchy of authority
 - Impersonal application of rules
 - Promotion based on merit or seniority
 - Quick response to environmental changes
 - Reliance on rules, policies, and procedures

17. A production line supervisor is considering ways to redesign certain individual jobs. Which of the following changes would lead to job enrichment?
- Feedback on job performance before the supervisor is appraised
 - Self-regulation of work speed
 - Self-determination of work methods
 - Self-inspection of output
 - All of the above
18. Which of the following best describes a company that is vertically integrated?
- It complies fully with equal access and equal opportunity laws
 - It manufactures most of its products' component parts
 - It owns or controls its raw materials and production facilities
 - It uses a line and staff organizational structure
 - It sells its products to multiple markets
19. An organization's structure should
- Not take into account limitations of individuals
 - If sound, lead to success
 - Use the same basis of departmentalization on all levels
 - Reflect organizational strategy
 - Integrate formal and informal organizations
20. Which of the following statements is true concerning how much planning should take place in an organization?
- Small firms must plan ahead just as extensively as large firms
 - There is little relationship between the amount of planning done and the organization's success
 - Long-term plans should be made in the same detail as immediate plans if they are to be of value
 - There is little relationship between the cost of a project and advance planning
 - Planning increases in volume as organizations grow in size
21. One of the basic objectives of effective staffing is to provide experience for the further development of managers. Which of the following activities is least likely to provide such experience?
- Organization orientation sessions.
 - Job rotation.
 - Mentor relationship
 - Junior boards
 - "Assistant to" positions
22. According to the path-goal approach to leadership, the most effective leaders are those who
- Accumulate the most power in their position
 - Help employees find the path for the achievement of personal goals
 - Identify paths that will take both them and their subordinates to the "top" of the organization
 - Help subordinates achieve both enterprise and personal goals
 - Recognize that the path to goal achievement is through participative management
23. Assume that the diagram below is a fair representation of the mix of leadership skills needed by various levels of management. Select the combination which most closely resembles the usual relationship



- (1) Conceptual; (2) human; (3) technical
- (1) Human; (2) conceptual; (3) technical
- (1) Human; (2) technical; (3) conceptual
- (1) Technical; (2) human; (3) conceptual
- (1) Conceptual; (2) technical; (3) human

24. Studies of managerial communications have indicated that:
- Most managers are excellent communicators
 - Managers spend most of their time communicating
 - Written communication takes more of managers' time than oral communication
 - Most effective communicators will be good managers
 - Managers delegate most of their important communication responsibilities
25. Which of the following statements regarding the communication device known as the grapevine is most correct?
- The network is designed by management
 - The network is known by everyone in the organization.
 - Messages are usually oral rather than written
 - Only legitimate means are used to transmit messages
 - Feedback exists
26. An example of a matrix organization would be one which had
- 1 A mixture of classical and behavioral management approaches
 - 2 A combination of functional and product departmentalization
 - 3 Project groups formed with personnel from functional departments
- (1) only
 - (2) only
 - (3) only
 - Both (1) and (2).
 - Both (2) and (3)
27. Generally, business organizations are departmentalized according to
- Geography
 - Product
 - Business functions
 - Type of customers
 - Management talents
28. Coordination for frequently recurring routine matters is best achieved by establishing
- Designated liaison personnel
 - An ad hoc committee.
 - A form
 - A procedure
 - A rule
29. A nonprogrammable decision would be to
- Determine when to order a common part
 - Choose a supplier of pencils for office use
 - Select the best way to ship a package
 - Determine the standard cost for a manufactured item
 - Determine whether to add a specific new product to the product line
30. There are many interrelated activities with in Project A which must be coordinated over the next 18 months. What planning and control tool would be most helpful in this situation?
- Planning, programming, and budgeting systems (PPBS)
 - Program evaluation and review technique (PERT)
 - Zero based budgeting
 - Management by objective (MBO)
 - Decision theory

QUESTIONS 31-40: ESSAY**31. Estimated Time: 15 Minutes**

Jane Tilden has just been promoted to supervisor of the claims section with a mandate to improve productivity. The claims section has a reputation for spending an excessive amount of time socializing. The employees are friendly and competent but they don't seem to realize that the firm needs to make a profit.

Jane asks four other supervisors for their advice on how to approach her new responsibility. She receives the following replies:

Supervisor 1.

Clearly, management planning is lacking. With proper planning that is followed by organizing and control, productivity will increase.

Supervisor 2.

Perform time and motion studies. Then develop an individual incentive plan. That will increase productivity and help identify deadwood.

Supervisor 3.

Analyze section inputs and required outputs. Develop appropriate work processes and then be supportive of individuals.

Supervisor 4.

Productivity won't improve until work teams are formed. Show workers that management is truly interested in their welfare.

Required:

- a. List the numbers 1 through 4 on your answer sheet. After each number write the appropriate letter that best indicates the management school or approach being advocated by each of the four supervisors.
 - a. Behavior modification
 - b. Systems approach
 - c. Management process or operational approach
 - d. Contingency approach to leadership
 - e. Classical or scientific management.
 - f. Behavioral/group approach
- b. Evaluate Supervisor 3's approach.

32. Estimated Time: 15 Minutes

The planning department of Blue Sky Enterprises has been having difficulty finding and keeping good employees. The following staffing policies have been in effect for some time.

- a. The department pays more than competitors.
- b. Recruiters do not visit women's universities or colleges.
- c. The department gives annual salary raises to everyone.
- d. Only information about current projects is given to the planners.
- e. Once each year, every employee is thoroughly evaluated and provided with feedback concerning performance.

Required:

Explain why each of the above constitutes poor staffing policy.

33. Estimated Time: 15 Minutes

In the process of staffing an organization, job analyses are performed by a personnel task force of the industrial relations department. Following these analyses, job descriptions and job specifications may be prepared.

Required:

- a. Give two purposes of a job description.
- b. Give two purposes of a job specification.
- c. Write the numbers from (1) through (5) on your answer sheet. Opposite each number, write the letter "d" if the corresponding item below would be found in a job description, and the letter "s" if that item would come from a job specification.
 - (1) Education
 - (2) Specific duties
 - (3) Experience
 - (4) Reports to
 - (5) Personal characteristics

34. Estimated Time: 10 Minutes

Some leadership theories identify leadership styles as being either directive (autocratic, task oriented, Theory X) or participative (democratic, people oriented, Theory Y). A manager should first diagnose the situation and then select the most appropriate leadership style.

Required:

List the numbers 1 through 9 on your answer sheet. Besides each number place the letter "d" or "p" to indicate whether a directive or participative leadership style would be most appropriate for each of the nine situations listed below.

- 1 A creative decision is needed.
- 2 Employees are creative in carrying out their regular tasks but lack confidence in their own decision making ability.
- 3 There is only a short time frame for decision making.
- 4 A change is necessary, employees understand the need for this change, but it will be unpopular.
- 5 Employees are new and not well trained in their work.
- 6 Employee acceptance of the decision is critical.
- 7 Employee performance is rapidly declining despite your friendly attitude and concern for their welfare.
- 8 The manager is the only member of the work group with the skill and the knowledge to make the decision.
- 9 There is no known consensus among employees with regard to a pending decision.

35. Estimated Time: 10 Minutes

Perceptions are conditioned by experience, personality, frame of reference, and attitude. Managers receive and transmit information on the basis of how they relate to themselves and others. Some writers have identified four levels of knowing and not knowing information. These are:

Arena:

All the information necessary to carry on a communication is known by the manager and the other individuals.

Blindspot:

Information is known by others but not the manager.

Facade:

Information is known by manager but not by others.

Unknown:

Neither the manager nor the others are aware of the information known by the other.

Consider the six communication situations below from the perspective of the manager.

- 1 The people I manage work only to supplement their family's income, and I suspect they have no ambition to get ahead.
- 2 I attended a meeting with a health commissioner to discuss the health implications of solid waste disposal. However, all that was discussed was the environmental aspects of the problem. We "got nowhere" and the problem remains unresolved.
- 3 I asked my assistant to complete a job as soon as possible. When I arrived this morning, it was not done.
- 4 My boss likes only good news, so I bury the bad news.
- 5 I frequently converse with my subordinates as a group and as individuals. They are very open and so am I.
- 6 My boss's smoking habit is very distracting to me.

Required:

List the numbers 1 through 6 on your answer sheet. Beside each number, write the letter ("A" for arena, "B" for blindspot, "F" for facade, or "U" for unknown) which best describes the combination of knowledge or lack thereof reflected in the numbered situations.

36. Estimated Time: 10 Minutes

A company's president recently commented, "I had expected that the entire company's efficiency and effectiveness would improve since we purchased that MAGNUS ONE super computer. After all, we now provide much more data to all of our main office executives. But after spending all of that money, nothing seems to have improved. Many managers are now complaining about the data and reports that they are receiving."

Required:

List five potential problems that might result from an inadequately planned data expansion program.

37. Estimated Time: 15 Minutes

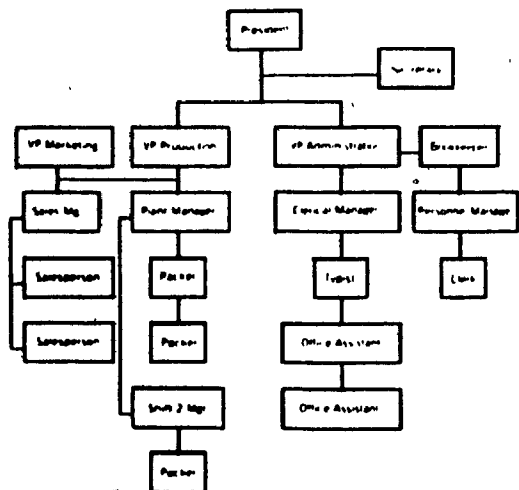
It is recommended that major decisions such as marketing a new product be pilot-tested on a limited basis before management fully commits itself to the action

Required:

- a. Discuss three benefits of pilot-testing a decision.
- b. Discuss three management situations that would make a pilot-test inadvisable or impossible.

38. Estimated Time: 15 Minutes

George Jones ran a small mail-order business and saw no need for an organizational chart. "After all, we have only twenty people," he commented. When a friend pressed him, he drew the following chart



Required:

- a. Give two reasons why an organization chart should be prepared.
- b. Assume that the above chart is a fair representation of the organization. Identify five examples of poor organizational structure evidenced by the above chart. Support each of your answers with an example from the chart.

39. Estimated Time: 15 Minutes

Several theories of motivation distinguish between two types of rewards. Rewards that are internal to the individual are called content factors or intrinsic rewards. Rewards that are directly controlled and distributed by the organization are called context factors or extrinsic rewards. Many experts believe that both types of rewards are necessary for a stable and productive work force

Required:

- a. Give four examples of intrinsic or content rewards
- b. Give four examples of extrinsic or context rewards

40. Estimated Time: 15 Minutes

The following statements have been extracted from various planning documents prepared by the Essex Co. They may be classified as statements of mission, statements of objective or strategy pronouncements

1. We expect to achieve a 15 percent return on equity
2. We expect to establish a reputation for good service
3. We plan to produce, market, and sell automobiles
4. We expect to introduce new models annually
5. We plan to develop a full line of products for each of our markets
6. We expect to have a network of 300 dealer ships throughout the country

Required:

- a. Briefly define the organization's
 - (1) Mission
 - (2) Objectives
 - (3) Strategy
- b. List the numbers 1 through 6 on your answer sheet. Beside each number, write either M (mission), O (objective), or S (strategy) to classify each of the above statements.

END OF PART III

CERTIFIED INTERNAL AUDITOR EXAMINATION

Prepared and administered by the Board of Regents of The Institute of Internal Auditors, Inc.

EXAMINATION FOR PART IV DISCIPLINES RELATED TO INTERNAL AUDITING

FRIDAY, MAY 14, 1982 — 2:00 P.M. to 5:00 P.M.

Questions	Estimated Time (Minutes)
1-30	55
31	20
32	10
33	15
34	15
35	15
36	15
37	15
38	20
	<hr/>
	Total 180

The estimated time allowance approximates the relative weight assigned to each question.

READ THE FOLLOWING INSTRUCTIONS CAREFULLY

- Place your candidate number on each answer sheet in the space provided and begin each answer on a new sheet.
- Number all answer sheets consecutively. The answer sheet for multiple-choice questions is page 1.
- Arrange your answers in the numerical order of the questions.
- Calculations made to support your answers should be legible, clearly referenced to your answers, and submitted on the answer sheets provided.
- Legible writing and clear exposition will help assure that you receive appropriate credit for your answers.

**FAILURE TO FOLLOW THESE INSTRUCTIONS
MAY ADVERSELY AFFECT THE GRADING OF YOUR ANSWERS**

**QUESTIONS 1-30: MULTIPLE CHOICE
ESTIMATED TIME: 55 MINUTES**

Select a single answer which best completes the statement or answers the question. Mark your answer by blackening with a soft lead pencil the appropriate answer space on the answer sheet provided.

SAMPLE QUESTION

"Megabyte" is a term used by computer manufacturers to:

- Measure the size of core storage capability.
- Identify the complexities of software
- Describe a specific piece of hardware
- State the price of computer equipment
- Measure an interval of processing time

A B C D E

ANSWER THE FOLLOWING:

- Finley Corporation's income before taxes was \$70,000 for the current year's first interim period. Management estimates that the income before taxes will be \$350,000 for the full fiscal year. Assume the first \$25,000 of taxable income is subject to a tax rate of 22 percent ($\$25,000 \times 22 = \$5,500$) and any additional taxable income is subject to a tax rate of 50 percent. What should be the provision for income taxes for the first interim period?
 - \$28,000
 - \$35,000
 - \$33,600
 - \$42,000
 - \$29,500
- Which one of the following items should be classified as a long-term liability of a company with a one-year operating cycle?
 - A prepayment received on a contract signed but not to be executed for six months.
 - This month's notes payable which will be refinanced under an already signed refinancing agreement with long-term notes due in three years.
 - A \$50,000 judgment against the company which has been appealed. The company fully expects the appeal to be rejected within six months.
 - Estimated warranty costs expected to be incurred in the next period.
 - Accrued vacation pay for employees where the majority of vacation time will be taken between 8 and 12 months from now.
- Which of the following capitalized items should not have been capitalized?
 - The cost of reinstalling or rearranging equipment to facilitate more efficient future production.
 - The cost of removing an old building from land that was purchased with the intent of constructing a new office building on that site.
 - The estimated cost of equity capital during the construction period of a new office building.
 - The cost of a new hospital wing.
 - The capitalized cost of a computer leased for eight years, the estimated economic life of the computer.

The following information applies to Questions 4 and 5:

Present Value Amount of 1, and Ordinary Annuity Information

All values are for four periods with an interest rate of 8 percent

Amount of \$1	1.36
Present Value of \$1	0.74
Amount of Ordinary Annuity of \$1	4.51
Present Value of an Ordinary Annuity of \$1	3.31

- Jim Green decides to create a fund which will earn 8 percent compounded annually that will enable him to withdraw \$5,000 per year each June 30, beginning in 1986 and continuing through 1989. Jim wishes to make equal contributions on June 30 of each of the years 1982 - 1985. Which equation would be used to compute the balance which must be in the fund on June 30, 1985, for Jim to satisfy his objective?
 - $\$x = \$5,000 \times 3.31$
 - $\$x = \$5,000 (3.31 + 1.00)$
 - $\$x = \$5,000 \times 1.36$
 - $\$x = \$5,000 \times 4.51$
 - $\$x = \$20,000 \times .74$

5. Jones wants to accumulate \$50,000 by making equal contributions at the end of each of four succeeding years. Which equation would be used to compute Jones' annual contribution to achieve the \$50,000 goal at the end of the fourth year?
- $\$x = \$50,000/4.51$
 - $\$x = \$50,000/4.00$
 - $\$x = \$12,500/1.36$
 - $\$x = \$50,000/3.31$
 - $\$x = \$12,500 \times 74$
6. A loan is to be repaid in eight annual installments of \$1,875. The interest rate is 10 percent. The present value of an ordinary annuity for eight periods at 10 percent is 5.33. Identify the computation which approximates the outstanding loan balance at the end of the first year.
- $\$1,875 \times 5.33 = \underline{\$9,994}$
 - $\$1,875 \times 5.33 = \$9,994, 9,994 - 1,875 = \underline{\$8,119}$
 - $\$1,875 \times 5.33 = \$9,994, 1,875 - 999 = 876, 9,994 - 876 = \underline{\$9,118}$
 - $\$1,875 \times 7 = \underline{\$13,125}$
 - $\$1,875 \times 8 = \$15,000, \$15,000 - (1,875 \times 5.60) = \underline{\$14,625}$
7. A probable advantage to an organization that used outside data processing services rather than its own internal data processing department is that,
- Data are more secure because data are handled by fewer organizational personnel.
 - Processing priorities can be established and enforced internally.
 - More direct control can be exercised over computer operations.
 - The using organization pays only for the amount of computer capacity that is used.
 - There is greater user involvement because of the need to better communicate user needs.
8. Many people believe that a data processing department ought to have long range plan. Which of the following is not likely to appear in a long range plan?
- Organizational goals and objectives.
 - Detailed flowcharts for each computer program that will be developed.
 - Schedule of the development of each project.
 - Identification of the hardware, personnel, and financial resources that will be required.
 - Forecast of future hardware developments.
9. Restart and recovery procedures used with computer systems
- Are limited to data base management systems.
 - Require the use of magnetic tape storage to hold the back-up data.
 - Can be used only in computers that have virtual storage.
 - Increase the efficiency of computer operations since restart eliminates the need to rerun the complete program.
 - Reduce the need for off-site data storage.
10. Many organizations are considering micro computers for business use. In comparison with large-scale computers, microcomputers
- Are generally more reliable because there is less hardware to malfunction.
 - Use only compiler-based languages, such as COBOL or FORTRAN.
 - Cannot be connected to large-scale computers.
 - Have faster processor functions due to the increased density of core design.
 - None of the above.
11. Which of the following is a potential advantage of fixed length computer records compared to variable-length computer records? Fixed length computer records
- Are better suited for use with magnetic tape than on disk.
 - Use disk space more efficiently.
 - Are easier to block, thus facilitating access to stored data.
 - Are better suited for data transmissions because they require less space.
 - Are more compatible with internal computer storage which contains fixed-length registers.
12. The key verification process associated with keypunching computer cards for input to computer system is
- Effectively used to detect the erroneous recording of data on source documents.
 - Inexpensive and therefore widely used.
 - Used to detect errors introduced by the keying process.
 - Used generally with a computer program written to check the data.
 - Most effective when control totals are utilized.

13. Which of the following types of taxes levied on companies in a competitive industry is likely to have the least impact on that industry's short-run output of goods
- Creation of a value added tax
 - An increase in the employer's share for employee retirement taxes
 - An excise tax levied on units sold
 - An increase in sales tax.
 - An annual license fee, for a fixed amount, paid for the right to operate each individual business
14. Economists have used a "balanced budget multiplier" concept to analyze the effects of changes in government taxes and spending on national income. According to the "balanced budget multiplier" concept, a \$40 billion decrease in both government taxes and government spending will.
- Decrease national income by \$40 billion.
 - Decrease national income by \$40 billion times the marginal propensity to consume
 - Increase national income by \$40 billion.
 - Increase national income by \$40 billion divided by the marginal propensity to save
 - Not affect national income
15. Which of the following interest bearing obligations would carry a current interest rate that best approximates the expected rate of inflation in the very near term?
- Commercial paper, such as business short term obligations
 - Corporate bonds, such as corporate long term obligations
 - Treasury bills, such as government short-term obligations
 - Treasury savings bonds, such as government long-run obligations
 - High grade preferred stocks
16. Assume that a tax on pollution is imposed on all companies in a competitive industry. The tax causes marginal production costs for each company to rise by a constant amount per unit. Given that the affected industry has the usual downward sloping demand and upward sloping supply curves, the tax on pollution for the industry will cause.
- Output (selling) prices to fall
 - An increase in the supply of goods at each price (such as a rightward shift in the industry supply curve)
 - Output (selling) prices to rise by less than the amount of the tax
 - Less demand for goods at each level of prices (such as a leftward shift in the industry demand curve)
 - Output (selling) prices to rise by an amount equal to or greater than the amount of the tax per unit
17. Marginal revenue will equal marginal cost and average revenue will equal average cost at economic equilibrium in industries whose structure can be described as
- Perfect competition
 - Government owned
 - Oligopoly
 - Monopoly
 - Regulated industries.
18. When marginal costs of production equal average costs of production, average costs typically will be
- Rising
 - Falling
 - At a maximum
 - At a minimum
 - Either c or d.
19. The economic order quantity (EOQ) model can be used to determine the optimum size of a purchase. The objective of the EOQ model is to minimize the.
- Cost of placing an order
 - Number of orders placed in a specified period of time
 - Cost of carrying the units of inventory.
 - Sum of the cost of placing an order and the cost of carrying the units in inventory
 - Sum of the cost of the products purchased and the cost of carrying these units in inventory

20. In multiple linear regression analysis, the coefficient of determination (R^2) indicates
- The relationship between the independent variables
 - The percentage of the total variation in the dependent variable that is explained by the regression equation
 - The percentage change in the dependent variable for a given change in the independent variables
 - Whether there is a linear relationship between the independent variables and the dependent variable
 - The slope of the regression line
21. An insurance company is considering the installation of an on-line computer system to respond to inquiries on policies. The frequency of inquiries varies depending upon the time of day. When making the decision, management must consider the trade off between the cost of losing clients, if prompt service is not provided, and the cost of infrequently used capacity. The most appropriate quantitative technique for making this decision is
- Sensitivity analysis
 - Regression analysis
 - Queuing theory
 - Linear programming
 - Bayesian analysis
22. Which of the following would **least** likely cause an unfavorable materials quantity (usage) variance?
- Materials that do **not** meet specifications
 - Machinery that has **not** been maintained properly
 - Labor that possesses skills equal to those required by the standards
 - Scheduling of substantial overtime
 - The mix of raw material does **not** conform to plan
23. A company's break even point in sales dollars may be affected by an increase in both selling price and variable cost per unit by an equal percentage (assume all other factors are equal within the relevant range). The equal percentage changes in selling price and variable cost per unit will cause the break-even point in sales dollars to
- Decrease by **less than** the percentage increase in selling price
 - Decrease by more than the percentage increase in the selling price
 - Increase by less than the percentage increase in selling price
 - Increase by more than the percentage increase in selling price
 - Remain unchanged
24. In a responsibility accounting system, costs are classified into categories on the basis of
- Fixed and variable costs
 - Prime and overhead costs
 - Administrative and non administrative costs
 - Controllable and non controllable costs
 - Direct and indirect costs
25. Given the following events and their associated probabilities of outcome, determine the probability of events A and C occurring simultaneously

Events and Probability

Events	A	B	C	A or C	A or B
Probability	1/3	1/4	1/2	5/6	5/12

- 5/6
 - 1/2
 - 1/6
 - 1/24
 - 0
26. Underapplied factory overhead related to a decrease in production should be charged to
- Work in process inventory
 - Finished goods inventory
 - Cost of goods sold
 - Work in process inventory and finished goods inventory
 - Work-in-process inventory, finished goods inventory, and cost of goods sold

27. Earnings before interest and taxes (EBIT) for ABC Corp. is projected to be \$2,000,000. Management is considering three methods to raise additional working capital. The table below illustrates the calculation of earnings per share for ABC Corp. as presently constituted and under three additional financing alternatives

	ISSUE STOCK			
	Present State	1 All Common	2 All Preferred	3 Issue Bonds
Earnings before interest and taxes	\$1,500,000	\$2,000,000	\$2,000,000	\$2,000,000
Interest	-	-	-	\$450,000
Earnings before taxes	\$1,500,000	\$2,000,000	\$2,000,000	\$1,550,000
Income Taxes	\$750,000	\$1,000,000	\$1,000,000	\$775,000
Earnings after taxes	\$750,000	\$1,000,000	\$1,000,000	\$775,000
Preferred stock dividend	-	-	\$350,000	-
Earnings available to common stockholders	\$750,000	\$1,000,000	\$650,000	\$775,000
Number of shares of common stock outstanding	200,000	300,000	200,000	200,000
Earnings per share	\$3.75	\$3.33	\$3.25	\$3.88

- Which of the following is a correct assessment of the financing options considered by ABC Corp.?
- Earnings per share using the all common stock financing alternative should always exceed the earnings per share of the preferred stock financing because preferred dividends are not tax deductible
 - Financial leverage for issuing bonds is positive
 - Financial leverage can only be determined after a common stock dividend is projected.
 - The stockholders should be indifferent among the three financing alternatives.
 - All of the above
28. A company facing imperfect competition with an objective of maximizing sales will sell at lower prices and in greater quantities than it would if it were attempting to maximize profit as long as:
- Average revenue is rising.
 - Marginal revenue is positive
 - Marginal revenue equals marginal cost
 - Average costs are rising
 - Marginal costs equal zero
29. A firm in need of cash but reluctant to increase debt might resort to:
- Pledging assets.
 - Factoring receivables.
 - Issuing trust receipts
 - Drawing down a line of credit.
 - Issuing commercial paper.

30. Auditors are often concerned whether requests for proposals (RFPs) for new computer systems are well formulated. Which of the following should typically be included in a request for proposal?
- The hardware configuration.
 - An emphasis on software rather than hardware
 - Detailed specification of the current processing workload
 - An emphasis on the tasks to be performed rather than specific hardware capabilities
 - A written evaluation by the data processing department

QUESTIONS 31-38: ESSAY

31. Estimated Time: 20 Minutes

If a company employs the net present value approach to capital budgeting, the appropriate discount rate is the cost of capital

Required:

- Define the finance term "cost of capital." Include in your definition the major components of "cost of capital," how the components are weighted, and whether it is based on average costs or marginal costs.
- One assumption inherent in using the "cost of capital" approach is that investments will be made in projects with a rate of return greater than the cost of capital. Identify three other underlying assumptions regarding either investments or sources of capital inherent in using the "cost of capital" figure in capital budgeting decisions
- How should expectations of future periods of high inflation, such as inflation greater than 10 percent per year, be utilized or factored into the use of the "cost of capital" concept in the capital budgeting process.

32. Estimated Time: 10 Minutes

The following items relate to the recently completed fiscal year of SFB Company. You may assume all figures have been audited and are correctly stated.

Net Income (after tax and extraordinary gains)	\$85,000
Extraordinary gain, net of \$6,000 tax ..	\$6,000
SFB's portion of the earnings of a subsidiary reported on an equity basis	\$8,000
Dividend received from the above subsidiary	\$2,000
Appropriation of retained earnings for contingent losses	\$25,000
Depreciation expense	\$20,000
Loss on sale of equipment with a book value of \$25,000	\$10,000
Amortization of premium on bonds payable	\$2,000

The current income tax rate is 50 percent.

Required:

Prepare a schedule (in good form) computing only that portion of the working capital that is provided by operations. Clearly label each component.

33. Estimated Time: 15 Minutes

The expected value technique represents a methodology to choose among investment opportunities. Below are two investment opportunities where information is available to use the expected value technique in choosing among investments. You may assume that both alternatives require the same outlay of resources and have the same investment life.

	Probability of Outcome	Outcome (Expected Annual Rate of Return on Investment)
Investment A	.9	15%
	.1	20%
Investment B	.4	0%
	.5	40%
	.1	60%

Required:

- a. Which investment should be chosen if you use the expected value approach? Support your answer with appropriate calculations.

- b. The expected value approach forces managers to consider some things that would not otherwise be considered using a "best estimate" approach. What are these additional factors introduced for consideration by the expected value approach?
- c. Considering the two investments above, what basic assumptions underlie the expected value approach that might deter a division manager from using only the results from the expected value technique in making the investment decision?

34. Estimated Time: 15 Minutes

RDN Corporation is planning to acquire Science Plus Corporation, a manufacturer of various products. RDN's controller prepared an extensive analysis of Science Plus's history, including a trend analysis of its accrual-based net income over the previous decade. While presenting this analysis, the controller was interrupted by the question, "Isn't it better to analyze cash flows rather than net income in assessing such investments?"

Required:

In comparison with a trend analysis of accrual based net income:

- a. Identify the major advantages of using cash flow analysis in making the above investment decision.
- b. Identify the major disadvantages of using cash flow analysis in making the above investment decision.

35. Estimated Time: 15 Minutes

Many organizations are moving the data entry process closer to the point where data are initially captured in the organization. Often data capture is accomplished by entering data into the system by remote terminals as the data enters the organization and by electronically transmitting the data to a central processing facility. This is in contrast to a more traditional approach of recording data manually on source documents and later keying the data into punch cards, magnetic tape, or disks.

Required:

- Do you agree or disagree with the following statement: "On-line data entry eliminates the effectiveness of batch controls." Explain and provide support for your answer.
- What are the major advantages of moving the data entry process closer to the point where data enters the organization? You may assume that data are entered through remote terminals.
- What are potential disadvantages of moving the data entry process closer to the point where data enters the organization? You may again assume that data are entered through remote terminals.

36. Estimated Time: 15 Minutes

Automated Program Library Systems are major software systems often purchased for use in medium to large scale data processing installations.

Required:

- Distinguish between "source" code and "object" code program libraries.
- Briefly define and describe "automated program libraries". What are they and what do they do?
- Briefly describe the major features that one might find in an "automated program library" that should interest both data processing management and internal auditors.

37. Estimated Time: 15 Minutes

A frequently heard proposal is that corporate income taxes ought to be decreased. A substantial decrease in corporate income tax rates may have an effect on both the price and quantity of goods sold depending on the competitive nature of the industry. For example, the reduction in income taxes may affect the prices and quantities of a monopolist differently from the prices and quantities of a company operating in a purely competitive environment. Also some effects will be seen in the short run (as defined by economists) while others may require a longer period to take effect.

Required:

- On your paper, set up a format similar to the following.

Effect of Corporate Income Tax Decrease

Competitive Environment	Short Run		Long Run	
	Price	Quantity	Price	Quantity
Pure Competition	a b	a b	a b	a b
Monopoly	a b	a b	a b	a b

Alongside a in each box write the word "increase," "decrease," or "none" to indicate the effect of a substantial decrease in corporate income tax rates.

- Alongside b in each box write the words "greater than," "less than," or "equal to" to describe the relative change of Price or Quantity to the percent decrease in corporate income tax rates. For example, if the percentage change in selling price would be the same as the percentage change in tax rates, write "equal to."
- Justify your responses to requirements a and b in the following situations:
 - Pure Competition, Long-Run, Price, and,
 - Monopoly, Long-Run, Price
 A diagram may be helpful in explaining the changes on prices and quantities.

38. Estimated Time: 20 Minutes

LeBo, Inc purchased a special purpose machine on January 1, 1981 at a cost of \$400,000. On December 31, 1982, the company can purchase a more modern machine for \$800,000. The new machine would be able to produce 25,000 more units per year than can be produced on the existing machine. LeBo estimates the additional 25,000 units can be sold and will not affect the current selling price of \$8.00 per unit. Other information related to the two machines is as follows:

	<u>Old Machine</u>	<u>New Machine</u>
Remaining useful life	5 years	5 years
Book value on Dec. 31, 1982	\$300,000	\$800,000
Salvage value on Dec. 31, 1982	\$200,000	—
Salvage value on Dec. 31, 1987	\$50,000	\$100,000
Annual straight line depreciation	\$50,000	\$140,000
Selling price per unit	\$8.00	\$8.00
Variable manufacturing cost per unit	\$4.00	\$3.75
Variable selling cost per unit	\$1.00	\$1.00
Fixed manufacturing cost per year (Does not include depreciation on machine)	\$45,000	\$45,000
Fixed selling cost per year	\$25,000	\$35,000
Cost to install new machine		\$8,000
Expected unit production per year	75,000	100,000

Required:

- Prepare a schedule of marginal costs associated with the potential purchase of the new machine. Based on your analysis of these and other relevant factors, recommend whether or not to purchase the new machine. Ignore income taxes and interest costs in your analysis. Your schedule should identify only the pertinent costs and revenues and concentrate on the potential purchase decision.
- Cite two factors (other than the financial analysis above) the company should also consider in making the purchase decision. Indicate the rationale for your choice of these factors.

END OF PART IV

6.3 Appendix C

CANDIDATE PROFILE CENSUS

This census instrument is being used to help the Institute of Internal Auditors determine the profile of CIA examination candidates. Your assistance will be greatly appreciated.

NOTE: Use the specially marked multiple choice answer sheet. Turn this answer sheet in to your examination proctor separately from your other examination papers. DO NOT TURN THIS CENSUS IN WITH YOUR EXAMINATION!

Step 1: Enter your candidate identification number on the answer sheet in the space provided. Blacken the corresponding numbers in the columns.

Step 2: Mark the appropriate circle on your answer sheet as indicated below:

1. Are you a member of the Institute of Internal Auditors?

YES	A
NO	B
2. In which age bracket do you fall?

18 to 24	A
25 to 29	B
30 to 34	C
35 to 45	D
over 45	E
3. What is your sex?

Female	A
Male	B
4. Which parts of the CIA examination have you passed? (Mark as many as apply)

Part I	A
Part II	B
Part III	C
Part IV	D
None	E
5. If you have ever repeated any part of the examination please indicate the part(s) you have repeated? (Mark as many as apply)

Part I	A
Part II	B
Part III	C
Part IV	D
None	E
6. What is your employer classification?

Manufacturing	A
Retail	B
Finance & Banking	C
Government	D
Other	E
7. What is your job classification?

IA Manager or above	A
IA Supervisor	B
IA Senior	C
Internal Auditor	D
Other	E
8. How many years work experience do you have?

None	A
Less than 2 years	B
2 to 4 years	C
5 to 7 years	D
8 years or more	E
9. How many years experience do you have in Internal Auditing?

None	A
Less than 2 years	B
2 to 4 years	C
5 to 7 years	D
8 years or more	E
10. How would you rate your employer's support of the CIA Program?

Negative	A
Indifferent	B
Some Support	C
Medium Support	D
Strong Support	E

CONTINUED ON THE OTHER SIDE

11. What is your highest academic degree?

Baccalaureate in progress	A
Baccalaureate	B
Masters	C
Doctorate	D
Other	E

12. What year did you/will you receive the above degree?

1980 or after	A
1975 - 1979	B
1970 - 1974	C
1965 - 1969	D
Before 1965	E

13. What was your major?

Accountancy	A
Business (other than Acctcy)	B
Computer Science	C
Engineering	D
Other	E

14. What was your grade point average?

Superior	A
Above Average	B
Average	C
Below Average	D
Don't Know	E

15. How did you prepare for this examination?

Chapter sponsored CIA review course	A
Employer sponsored CIA review course	B
Other Commercial CIA review course	C
Self-designed study course	D
Other	E

16. How much time did you spend preparing for this examination?

None	A
1 - 50 hours	B
51 - 200 hours	C
201 - 300 hours	D
More than 300 hours	E

