

TANCET

Sample Paper 1



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SECTION - I
ANALYSIS OF BUSINESS SITUATIONS

Directions : There are two passages in this section. Read each one; read also the directions for answering questions under the passage before answering.

FIRST PASSAGE

FSL was a food manufacturing company established in 1945. Until 1995 its major products consisted of tomato specialties such as pickles and barbecue sauces. Its consumer products business accounted for 40% of sales; the balance consisted of sales to restaurants, hospitals and armed forces. The company has advertised for restaurant, hospital market but never for household consumers.

In 1995, the company introduced products meant for consumer market. The line was composed of a number of dishes. Each package contained all of the necessary ingredients (except meat) including seasoned tomato sauce, cheese and noodles.

Jagdish, son of the company's president, had conceived the idea for the line of products. Jagdish's enthusiasm for the product was quickly picked up by other executives. The financial expert wanted expansion would enable the company to solve a number of financial problems associated with its inability to attract outside capital.

Many meetings were held through the summer. The original thinking of the committee was that the product line should be introduced at the beginning of the food-merchandising season, which started on about October 1. This deadline however, subsequently proved to be unrealistic. Production of the first items in the line did not get underway until September 30 and packaging difficulties prohibited introducing product before mid December.

In July the problems involved in the product introduction were not foremost in the planner's thoughts. Many hours were spent on discussing the name of the product. Finally, the name Vegetable Scotch was adopted but without enthusiasm from the president's son who believed that a name did not express the gourmet image that he thought the name should express. With the exception of the name this man directed most of the decisions related to the marketing program. From the beginning he argued that there were already plenty of middle class products on the grocer's shelves. What was needed, he believed, was a prestige-even a "gourmet" - line. The popularity of expensive restaurants in cities convinced young manager of the opportunity to market these food specialities.

Early in the planning it was decided to limit distribution to the regional markets in which this company had previously established its reputation. National distribution would be undertaken from the beginning. It was planned that preparation would be marketed in all major food chain and headquarters would be made by food brokers handling such products rather than brokers used to handling goods.

For the first time in its experience, FSL planned to undertake an extensive consumer-advertising programme. A small advertising agency in Delhi with slight experience in handling food products was appointed. However by the time the agency has been selected and oriented to the marketing programme, the time remaining before the scheduled introduction did not allow for the preparation of advertisements or sponsored programmes on TV. In order to break into the consumer market at the time of product introduction on October 1st a consumer-advertising programme using newspaper, television commercials and radio was prepared. Except for the

product introduction period, however, relatively little thought was given in planning sessions to the total amount money required to support the product with consumer advertising.

A number of circumstances combined to prevent the introduction in October as originally planned. No one has taken personal responsibility for package design and production was held up for three weeks while the company waited for supplies of packaging materials. FSL was forced to move very rapidly to obtain a package, but the result was neither very well designed nor attractive from a promotional point of view. Time was short, however, and there was no choice but to use this package or abandon the project for the present season and possibly altogether, depending upon competitive conditions.

A hastily put together advertising campaign was introduced in November. However, advertising cost had been greatly under estimated, that the intensity of the campaign was much lower than the manager had anticipated, even with the limited budget. As a result, most of the budget was allocated to newspapers and radio. Moreover problem of writing of the script of the TV commercial delayed broadcasting until the beginning of December. Newspaper advertisements and Radio commercials did commence as planned.

The new product was finally launched in mid December. However, by February, two major competitors began marketing similar products. Shortly thereafter the company to determine whether the product made a favourable impression on sponsored a market research survey housewives. The result of the survey was negative. Only twenty two percent of the housewives interviewed could recall the name and those only twelve percent had tried the product. Consumer evaluation of the product was for the first time, only, four percent stated that they would buy again.

Another indication that worried the company's management was that few major food chains showed interest. By midyear product sales were so poor that management established a special committee to determine without delay what immediate steps might be taken to reverse the poor sales record.

Directions: The questions that follow relate to the preceding passage. Evaluate, in terms of the passage, each of the item given. Then select your answer from one of the classifications.

- 1) A Major Objective in making the decision: one of the goals sought by the decision.
- 2) A Major Factor in making the decision: an aspect of the problem, specifically mentioned in the passage, that fundamentally affects and/or determines the decision.
- 3) A Minor Factor in making the decision: a less important element bearing on or affecting a Major factor, rather than a Major objective directly.
- 4) A Major Assumption in making the decision: a projection or supposition arrived at by the decision maker before considering the factors and alternatives.
- 5) An Unimportant issue in making the decision: an item lacking significant impact on, or relationship to, the decision.

Questions :

1. **Possibility of using existing production facilities in manufacturing new products.**
2. **Likelihood of achieving wide consumer acceptance of the new products.**
3. **Company's growth and expansion.**
4. **Age of FSL.**
5. **The popularity of high priced restaurants in the country.**
6. **Depth of company's experience and expertise in the sale of consumer products.**

7. **Market survey results.**
8. **Size of the advertising agency hired to promote the product.**
9. **National distribution of the product.**
10. **Company's inability to attract outside capital.**
11. **Difficulties with new package design.**
12. **Need for this new food line.**
13. **Market entry of competitors.**
14. **Obtaining packaging materials.**
15. **Introducing the new product in October 1st.**
16. **Interest of major food chains in the product.**
17. **Scripting of T.V. commercials.**
18. **Introduction of new product line.**
19. **Developing products as fast as possible.**
20. **Marketing ability of the company.**

SECOND PASSAGE

Coirfoam, a small company producing foam rubber mattresses, was in financial trouble, and its owners wanted to sell it. The company had been established some twenty years ago, but its market share had steadily declined over the last five years. Since, Mr. Krishnan had no previous, experience in the mattress business, he requested his friend to tell him what he could do about it.

His friend analysed the company's resources. Its best resources was its product and brand name. However, synthetics are much cheaper than foam rubber mattresses. Latex mattresses are known for their orthopaedic and anti allergic qualities, among others. The Coirfoam brand name had very nearly become a generic term for all types of rubber mattresses. Coirfoam however was the only latex mattress produced locally.

Apart from a superior product, the company had few resources. Its equipment, though satisfactory, was old. It operated in leased premises on a year to year basis, although the landlord was willing to conclude a long term agreement on favourable terms. On the other hand the company's labour force was experienced and dedicated and its production manager had more than ten year's experience in lated manufacturing.

The Chairman of the company was seventy years old and wanted to retire. Apart from the sales manager, no one else shared responsibility for marketing or administration. He told Krishnan's friend that if the company was sold, he had no intensions of remaining in service; he had eighteen years of experience in mattress industry. If the sales manager left the company Krishnan might not find a suitable replacement. This was another issue that Krishnan's friend had to study.

Coirfoam's financial position was precarious. The company was heavily in debt and its line of credit fully extended. There was some question as to whether the company would be able to purchase enough latex to keep production going, but the manager assured, that the company had a bank letter of credit to purchase additional month's supply.

In spite of the chairman's optimism, the fact was that his company had steadily lost market share once the dominant mattress manufacturers, with fifty percent of local market, its market share had declined to less than 10 per cent. The chairman attributed this decline to popularity gained by spring mattresses manufacturers, who had only begun production five years ago. Spring mattresses now accounted for seventy percent of the total market, another company ten percent,

with remaining twenty percent shared by a number of small plants producing synthetic rubber mattresses. Spring mattresses had some attributes similar to those of foam rubber, such as orthopaedic qualities. They were less costly to manufacture but sold to customers at about the same price as Coirfoam.

Because of Coirfoam's financial difficulties, it ceased advertising in Newspaper and on radio for over the past five years. As a result retailers were reluctant to handle the product. In contrast to it two spring manufacturers had advertised heavily in the mass media. One of these manufacturer's products was sold exclusively by the largest furniture chain. During his study of the mattress market, a number of retailers had expressed the opinion to Krishnan's friend that a whole generation of young people largely unaware of the Coirfoam product because of lack of advertising. One retailer was quoted saying: "It is true that older people remember Coirfoam, but these mattresses last for twenty years. The big market is not the replacement market, but sales generated by family formation. Thousands of young couples get married every year and every marriage means another mattress sale. It is obviously easier for my salesman to sell a mattress which his customers have seen in countless advertisements that one which is relatively unknown".

Krishnan's friend was aware of the fact that if Coirfoam was ever to regain some of its lost market share, it would have to launch a major advertising programme to educate young -adults about the important attributes found in its products. A major question that needed an immediate answer was: "To what extent are people aware of Coirfoam mattresses and their attributes?" Other questions involved the attitudes of people toward spring mattresses in general and how these attitudes compared to those towards spring mattresses. Krishnan's friend ordered a market research survey to obtain answers to his questions. In brief, the study of Coirfoam mattresses showed that customers over twenty five years of age who were aware of Coirfoam mattresses had favourable attitudes towards their attributes. About three quarters of these people expressed a preference for foam rubber mattresses for their children (by contrast with other mattresses for their own use). Awareness among younger segments of the population of the attributes of foam rubber mattresses in general and Coirfoam in particular, was very low. Few people expressed an intention to buy foam rubber mattresses.

On the basis of the preliminary research Krishnan was optimistic that he could run the company around. In support of his brief, he sighted the recognition of the company among a significant portion of the population, and the fact that they would buy a Coirfoam for their children. He believed that once retailers became aware that new management had taken over the company, they would be willing to stock the product. Krishnan was aware that the research findings were not always in agreement with his conclusions. However, the findings that young people were relatively unaware of Coirfoam did not seem to worry him. He felt that well designed advertising programme would convince many people to buy a foam rubber mattresses, rather than any competing type. Moreover, the introduction of a new management team would instil confidence among Coirfoam bankers, credit lines would be increased thereby improving the company's financial position. However, before making a final decision as to whether to purchase Coirfoam, Mr. Krishnan waited for his friend's final report and recommendations.

Directions: The questions that follow relate to the proceeding passage. Evaluate, in terms of the passage each of the item given. Then select your answer from one of the classification.

- 1) A Major Objective in making the decision: one of the goals sought by the decision.
- 2) A Major Factor in making the decision: an aspect of the problem, specifically

- mentioned in the passage, that fundamentally affects and or determines the decision.
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Questions :

21. **Public awareness of the high quality of Coirfoam mattresses.**
22. **The anti allergic qualities of Coirfoam mattresses.**
23. **Attitude of older consumer towards Coirfoam mattresses.**
24. **Willingness of retailers to stock Coirfoam products in the future.**
25. **Need to import latex rubber.**
26. **Coirfoam's present market share.**
27. **Krishnan's friend's recommendations.**
28. **Coirfoam leased its premises.**
29. **Plausibility of changing consumer attitudes through advertising.**
30. **The Chairman's explanation for loss of market share.**

SECTION II
READING COMPREHENSION

Directions: This section contains two reading passages. You have to read each carefully. Each passage is followed by questions based on its content. After reading each passage, choose the best answer to each question. The questions are based on what is stated or implied in each passage.

FIRST PASSAGE

Virtually everything astronomers know about objects outside the solar system is based on the detection of photonsquants of electromagnetic radiation. Yet there is another form of radiation that permeates the universe; neutrinos. With (as its name implies) no electric charge and negligible mass, the neutrino interacts with other particles so really that a neutrino can cross the entire universe, even traversing substantial aggregations of matter, without being absorbed or even detected. Neutron can thus escape from regions of space where Sight and other kinds of electromagnetic radiation are blocked by matter. Further more neutrinos carry with them information about the site and circumstances of their production; therefore, the detection of cosmic neutrinos could provide new information about the history of the universes carry with them information about the site and circumstances of their production; therefore, the detection of cosmic neutrinos could provide new information about the history of the universe.

But how can scientist deduct a particle that interacts so infrequently with the other matter? Twenty five years passed between Pauli's hypothesis that the neutrino existed and its actual detection; since then virtually ail research with neutrinos has been with neutrinos created artificially in large particle accelerators and studies under neutrino microscopes. But a neutrino telescope, capable of detecting cosmic neutrinos, is difficult to construct. No apparatus can deduct neutrinos unless it is extremely massive, because great mass is synonymous with huge numbers of nucleons (neutrons and protons) and the more massive the detector, the greater the

probability of one of its neutrons reacting with a neutrino in addition, the apparatus must be sufficiently shielded from the interfering effects of other particles.

Fortunately a group of astrophysicists has proposed a means of detecting cosmic neutrinos by harnessing the mass of ocean. Named Dumand, for deep underwater Muon and neutrino detector, the project calls for placing an array of light sensors at a depth of five kilometers under the ocean surface. The detecting medium is the sea water itself; when a neutrino interacts with a particle in an atom of sea water, the result is a cascade of electrically charged particles and a flash of light that can be detected by the sensors. The five kilometers of seawater above the sensors will shield them from the interfering effects of other high-energy particles raining down through the atmosphere.

The strongest motivation for the Dumand project is that it will exploit an important source of information about the universe. The extension of astronomy from visible light to radio waves to X-rays and gamma rays never failed to lead to the discovery of unusual objects such as radio galaxies, quasars and pulsars. Each of these discoveries came as a surprise, neutrino astronomy will doubtlessly bring its own share of surprise.

Questions:

31. Which of the following titles best summarises the passage as a whole?

- 1) At the threshold of Neutrino Astronomy
- 2) Neutrinos and the history of universe
- 3) The creation and the study of Neutrinos
- 4) The Dumand system and how it works
- 5) The properties of Neutrino

32. Which of the following statements regarding neutrino astronomy would the author be most likely to agree?

- 1) Neutrino astronomy will supersede all present forms of astronomy
- 2) Neutrino astronomy will be abandoned if the Dumand project fails
- 3) Neutrino astronomy can be expected to lead to major breakthrough in astronomy
- 4) Neutrino astronomy will disclose phenomena that will be more surprising than past discoveries
- 5) Neutrino astronomy will always be characterised by a large time lag between hypothesis and experimental configuration.

33. In the last paragraph the author describes the development of astronomy in order to

- 1) Suggest that the potential findings of neutrino astronomy can be seen as part of a series of astronomical success
- 2) Illustrate the role of surprise in scientific discovery
- 3) Demonstrate the effectiveness of the Dumand apparatus in detecting neutrinos
- 4) Name some cosmic phenomena that neutrino astronomy will illuminate
- 5) Contrast the motivation of earlier astronomers with that of the astrophysicists, working on the Dumand project

34. The passage states that interactions between neutrinos and other matters are

- 1) Rare
- 2) Artificial
- 3) Unpredictable
- 4) Undetectable
- 5) Hazardous

35. According to the passage, one advantage that neutrinos have for studies in astronomy is that key

- 1) Have been detected for the last twenty five years
- 2) Possess a variable electric charge
- 3) are usually extremely massive
- 4) Carry information about their history with them
- 5) are very similar to other electromagnetic particles

36. According to the passage, the primary use of the apparatus mentioned would be to

- 1) Increase the mass of a neutrino
- 2) Interpret information neutrinos carry with them
- 3) Study the internal structure of a neutrino
- 4) See neutrinos in distant regions of space
- 5) Detect the presence of cosmic neutrinos

37. The passage mentions which of the following as a reason that neutrinos are hard to detect?

- 1) Their pervasiveness in the universe
- 2) Their ability to escape from different regions of space
- 3) The inability to penetrate dense matter
- 4) The similarity of their structure to that of nucleons
- 5) The infrequency of their interaction with other matter

38. According to the passage, the interaction of a neutrino with other can produce

- 1) Particles that are neutral and massive
- 2) A form of radiation that permeates the universe
- 3) In accurate information about the site and circumstances of neutrino's production
- 4) charged particles and light
- 5) A situation in which light and other forms of electromagnetic radiations are blocked

39. According to the passage, one of the methods used to establish the properties of neutrinos was

- 1) Detection of photons
- 2) Observation of interaction of neutrinos'with gamma rays
- 3) Observation of neutrinos that were artificially created
- 4) Measurement of neutrinos that interacted with particles of sea water
- 5) Experiments with electromagnetic radiation

40. The strongest motivation for the Dumand project is

- 1) That it will detect the presence of cosmic neutrinos
- 2) That it will exploit an important source of information about the universe
- 3) That measurement of neutrinos is possible
- 4) That it will suggest the potential of neutrino astronomy
- 5) That will doubtlessly bring its own share of surprises

SECOND PASSAGE

It is riot easy to write a familiar style. Many people mistake familiar for a vulgar style, and suppose that to write without affection is to write at random. On the contrary there is nothing that requires more precision and, if I may so say purity of expression than the style I am speaking of. It utterly rejects not only all unmanning pomp, but all new, cant phrases and loose, unconnected slipshod allusion. It is not to take first word that offers, but the best in common use; it is not to throw words together in any combinations we please, but to follow and avail ourselves of the idiom of the language. To write a genuine, familiar or truly English style to write as any one

would speak in common conversation who had a thorough command over choice of words, or who discourses with ease, force and perspicuity, setting aside all pedantic and oratorical flourishes. Or, to give another illustration, to write naturally is the easy thing to give the true accent and inflection to the words you utter, because you do not attempt to rise above the level of ordinary life and colloquial speech. You do not assume, indeed, the solemnity of the pulpit, or tone of stage declamation, neither or you at liberty to gabble on at a venture, without emphasis or discretion, or to resort to vulgar dialect or clownish pronunciation. You must steer a middle course. You are tied down to a given appropriate articulation, which you can do only by entering into the author's meaning, as you must find the proper words and style to express yourself by fixing your thoughts on the subject you have to write about any one may write a passage with a propriety and simplicity is more difficult task. Thus it is easy to affect a pompous style, to use so word twice for the thing you want to express; it is not so easy to pitch upon that very word that exactly fits in. Out of eight or ten words common, equally intelligible, with nearly equal pretensions, it is a matter of some nicety and discrimination to pick out the one the preferableness of which is scarcely perceptible, but decisive.

Questions:

41. According to the passage

- 1) One should be permitted to speak in any way he wishes to
- 2) 'Getting on stilts' should aid one in speaking more effectively
- 3) It is easier to write pompously than simply
- 4) The preacher is a model of good speech
- 5) A grammatical background is not necessary for good writing

42. When the writer says "you must steer a middle course", he means that

- 1) You should speak neither too loudly nor too softly
- 2) You should speak neither too formally nor too colloquially
- 3) You should write as well as speak
- 4) You should not come to any definite conclusion about what is proper or not proper in speech
- 5) You should write neither too fast nor too slowly

43. "Cant Phrases" means

- 1) A type of language which is peculiar to a particular class
- 2) A sing-song type of speech
- 3) Expressions which consistently indicate refusal to do another's bidding
- 4) Obscene language
- 5) Obsolete expressions

44. the author mentions all of the following important to good speech, except

- 1) A good command of English vocabulary
- 2) The careful selection of words used
- 3) The use of allusions and metaphors
- 4) Straight forward and precise delivery
- 5) The placing of emphasis on important words and phrases

45. The author

- 1) is critical of the person who converses in a manner which is easy to understand
- 2) Implies that foreigners do not speak well

- 3) Feels that there is relationship between the sound of a word and its meaning
- 4) Criticizes pomposity of style more so than vulgarity style
- 5) Urges us to speak like an actor or the preacher

**SECTION III
PROBLEM SOLVING**

Directions: For each of the following questions, select the choice which best answers the questions or completes the statement.

Questions:

46. The ratio of x to y is $\frac{1}{2}$. If the ratio of $x + 2$ to $y + 1$ is $\frac{2}{3}$, then what is the value of x ?

- 1) 6 2) 4 3) 3 4) 2 5) 1

47. If the width of a rectangle is increased by 25% while the length remains constant, the resulting area is what percent of the original area?

- 1) 25% 2) 75% 3) 125% 4) 225% 5) 250%

48. If n is an integer between 0 and 100, then any of the following could be $3n + 3$ EXCEPT

- 1) 300 2) 297 3) 208 4) 63 5) 6

49. Ravi is standing 180 meters due north of point P. Latha is standing 240 meters due west of point P. What is the shortest distance between Ravi and Latha?

- 1) 60 meters 2) 300 meters 3) 420 meters 4) 900 meters 5) 9000 meters

50. Roopa can stuff advertising circulars into envelopes at the rate of 45 envelopes per minute and Anusha requires a minute and a half to stuff the same number of envelopes. Working together, how long will it take Roopa and Anusha to stuff 300 envelopes?

- 1) 15 minutes
 2) 2 minutes
 3) 3 minutes 30 seconds
 4) 3 minutes 20 seconds
 5) 4 minutes

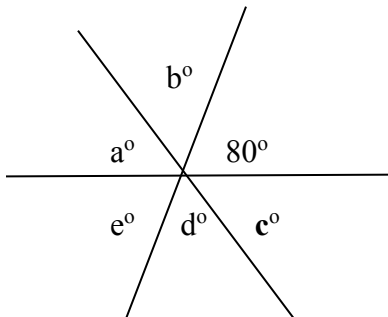
51. $(4 + \sqrt{5})(4 - \sqrt{5})$ is equal to

- 1) -1 2) 0 3) 11 4) 21 5) $11 + 8\sqrt{5}$

52. If interest on a savings account is paid monthly at an annual of $6\frac{1}{4}\%$ and if the interest is not reinvested, then in how many years will the total amount of interest earned equal the amount of money saved in the account?

- 1) 36 2) 24 3) 18 4) 16 5) 12

53.



In the figure above, if $a = 3d$, $b = ?$

- 1) 25 2) 80 3) 75 4) 35 5) 100

54. A store sells five different kinds of nuts. If it is possible to buy x grams of the most expensive nuts for Rs. 3.20 and x grams of the cheapest nuts for Rs. 1.40 then which of the following could be the cost of purchasing a mixture containing x grams of each type of nut?

- 1) Rs.1.76 2) Rs.2.84 3) Rs.3.54 4) Rs13.60 5) Rs.16

55. A boy receives grades of 91, 88, 86 and 78 in four of his major subjects. What he receive in his fifth major subject in order to average 85?

- 1) 86 2) 85 3) 84 4) 83 5) 82

56. If the following numbers are arranged in order from the smallest to the largest, what will be their correct order?

- I. $9/13$ II. $13/9$ III. 70% IV. $1/70$**

- 1) II, I, III, IV
2) III, II, I, IV
3) III, IV, I, II
4) II, IV, III, I
5) I, III, IV, II

57. A square is inscribed in a circle of area 18π . Find a side of the square.

- 1) 3
2) 6
3) $3\sqrt{2}$
4) $6\sqrt{2}$
5) It cannot be determined from the information given.

58. A line segment is drawn from the point (3,5) to the point (9,13). What are the coordinates of the mid point of this line segment?

- 1) (3,4) 2) (12,18) 3) (6,8) 4) (9,6) 5) (6,9)

59. Every letter in the alphabet has a number value which is equal to its place in the alphabet; the letter A has a value of 1 and C a value of 3. The number value of a word is obtained by adding up the values of the letters in the word and then multiplying that sum by the length of the word. The word 'DFGH' would have a number value of

- 1) 25 2) 44 3) 66 4) 100 5) 108

60. If $ab > 0$ and $a < 0$, which of the following is negative?

- 1) b 2) $-b$ 3) $-a$ 4) $(a - b)$ 5) $-(a + b)$

61. John rents a car for d days. He pays m Rs. Per day for each of the first 7 days, and half that rate for each additional day. Find the total change if $d > 7$.

- 1) $m + 2m(d-7)$ 2) $m + [m/2(d-7)]$ 3) $7m + [m/2(d-7)]$ 4) $7m + (md/2)$ 5) $7m + 2md$

62. The net price of a certain article is Rs. 306 after successive discount of 15% and 10% off the marked price. What is marked price?

- 1) Rs.234.09 2) Rs.400 3) Rs382.50 4) RS.408 5) None of these

63. A school has enough bread to feed 30 children for 4 days. If 10 more children are added, how many days will the bred last?

- 1) $5(1/3)$ 2) $1(1/3)$ 3) $2(2/3)$ 4) 12 5) 3

64. The ice compartment of a refrigerator is 8 inches long, 4 inches wide and 5 inches high. How many ice cubes will at hold if each cube is 2 inches on an edge?

- 1) 8 2) 10 3) 12 4) 16 5) 20

65. A train 100 metres long running at a speed of 50 km/hr crosses a 120 m. long train coming from the opposite direction in 6 seconds. What is the speed of the other train?

- 1) 82 km/hr 2) 70 km/hr 3) 85 km/hr 4) 72 km/hr 5) 65 km/hr

$$2^{m+1} \cdot 3^{2m-n} \cdot 5^{m+n+2} \cdot 6^n$$

66. Simplify: -----

$$6^m \cdot 10^{n+1} \cdot 15^m$$

- 1) 5 2) 3 3) 2 4) 5^m 5) 3^{-n}

67. The number 34041 and 32506 divided by a number of three digits, leave the same remainder. What is the number?

- 1) 535 2) 405 3) 357 4) 307 5) 275

68. My watch is slow by 7 minutes at 3 P.M. Wednesday and it was 8 minutes too fast at 9.00 A.M. on Friday. At what time it gave the right time by watch?

- 1) 7 A.M. Thursday
 2) 9 P.M. Thursday
 3) 5 A.M. Thursday
 4) 9 A.M. Thursday
 5) 5 P.M. Thursday

69. A cistern has a leak which would empty it in 8 hours. A tap is turn on which admits 6 litres a minute into the cistern, and it is now emptied in 12 hours. How many litres does the cistern hold?

- 1) 8640 litres 2) 5760 litres 3) 4320 litres 4) 2880 litres 5) 5670 litres

70. A certain basket ball team that has played $\frac{2}{3}$ of its games has a record of 17 wins and losses. What is the greatest number of the remaining games that the team can lose and still win atleast $\frac{3}{4}$ of the total games played?

- 1) 3 2) 4 3) 5 4) 6 5) 7

**SECTION IV
 DATA SUFFICIENCY**

Directions: Each question below is followed by two statements numbered as (a) and (b). You have to determine whether the data given in the statements is sufficient for answering the question. Use the data given, plus your knowledge of mathematics and every day facts, to mark your answer as

- 1) If statements (a) alone is sufficient to answer the question, but statement (b) alone is not sufficient.
 2) If statements (b) alone is sufficient to answer the question, but statement (a) alone is not sufficient.
 3) If both statements together are needed to answer the question, but neither statement alone is sufficient.
 4) If either statement (a) or (b) by itself is sufficient to answer the question.
 5) If not enough facts are given to answer the question.

Questions:

71. A piece of wood 7 feet long is cut into three pieces. What is the length of each of the pieces?

- a) The length of the longest piece is equal to the sum of the lengths of the other two pieces
- b) The length of the shortest piece is 6 inches

72. Is x an integer?

- a) $x > 0$
- b) $3^2 + 4^2 = x^2$

73. Does Balu have more records in his record collection than Lakshmi has in hers?

- a) Radha has more records in her collection than Lakshmi
- b) Balu has fewer records in his collection than Radha

74. What is the volume of cube C?

- a) The total surface area of C is 54 square inches
- b) The area of each face of C is 9 square inches

75. How much money is saved by buying a box of a dozen pencils instead of 12 pencils singly?

- a) when purchased in a box of 12, the cost of each pencil is Rs. 0.05 less than if purchased singly
- b) the price of a box of a dozen pencil is Rs. 2.40

76. Salim invested a total of Rs.10,000 for a period of one year. Part of the money he put into an investment that earned 6 percent simple interest, and the rest of the money into an investment that earned 8 percent simple interest. How much money did he put into the investment that earned 6 percent?

- a) The total interest earned on the Rs.10,000 for the year was Rs.640
- b) The rupee value of the investment that earned 6 percent was only one-fourth the dollar value of the investment that earned 8 percent.

77. If a car is driven 150 miles, the fuel tank is filled to what percent of capacity at the end of the trip?

- a) The car averaged 15 miles per gallon for the trip
- b) The tank is filled to 75 percent of capacity at the start of the trip.

78. What is the 999th term of the series S?

- a) The first four terms of S are $(1 + 1)^2$, $(2 + 1)^2$, $(3 + 1)^2$ and $(4 + 1)^2$
- b) For every x , the x th term of S is $(x + 1)^2$

79. When one piece of fruit is taken at random from a fruit bowl, what is the chance that is an apple?

- a) There are half as many apples as oranges in the fruit bowl.
- b) A third of the fruit in the fruit bowl are oranges

80. A swimming pool is supplied water by two pipes, P and Q. If pipe P operating alone can fill the pool in 12 hours, how long will it take pipe Q operating alone to fill the pool?

- a) Operating together, pipes P and Q can fill the pool in 4 hours
- b) Pipe P supplies water at the rate of 520 litres per hour, and 6240 gallons are required to fill the pool.

81. Is x divisible by 70?

- a) x is divisible by 2 and 5
- b) x is divisible by 2 and 7

82. A company's profit was Rs.800,000 in 1990. What was its profit in 1991?

- a) There was a 20% increase in income in 1991
- b) There was a 25% increase in costs in 1991

83. What is the value of $\{ (1/x) + (1/y) + (1/z) \}$?

a) $(xy+xz+yz) / (xyz) = 4$

b) $x + y = 3$

84. How many of the 60 applicants for a job passed neither the physical nor the written exam?

a) Of the 60 applicants, exactly 10% passed both the physical and the written exams

b) Of the 60 applicants, exactly 50% passed the physical exam, and exactly 20% passed the written exam

85. If the number of square units in the area of a circle is A and the number of linear units in the circumference is C what is the radius of the circle?

a) $A > C + 3$

b) $(A/C) = (3/2)$

SECTION - V ENGLISH USAGE

Directions: In each of the sentences below, four words or phrases have been underlined. Select the underlined part which contains an error in usage or grammar or punctuation. If there is no error, indicate (5) as the answer.

Questions:

86. The teacher asked the student if every one of them were ready

attend practical class everyday

87. The daughter parted with her mother with tears but the journey

to Delhi amused her.

88. He has been trying to search the lost book since Monday.

89. The company not only manufactures leather good but also

plastic ware.

90. The crowd at the stadium clapped jubilantly when the champion

received his trophy.

91. Let you and I see to it that we do not make such mistakes.

92. Those who are desirous of applying for the post they

should do so on forms supplied by the office.

93. None can deny that every scientific invention had proved

more harmful to humanity than beneficial.

94. In this year the monsoon failed, which caused a terrible famine

