

## MFC ACTUAL PAPER – 2007(Memory Based Questions)

71. The primary purpose of the passage is to
- (a) discuss reasons an accepted business theory is being reexamined
  - (b) present evidence that resolves a contradiction in business theory
  - (c) describe a tenet of business practices and how that tenet can be tested in today's economic environment
  - (d) argue that a counter-intuitive new business idea is, in the final analysis, incorrect
72. According to the passage, all of the following are examples of the subconscious process by which the brain makes a decision EXCEPT
- (a) analysis of information
  - (b) comparison and contrast of information
  - (c) rejected information that is not pertinent
  - (d) consulting a multitude of studies and examples
73. The author's attitude toward the long-held view that decisions should be made carefully over time expressed in lines 1-6 can best be described as
- (a) dismissive and scornful
  - (b) respectful but questioning
  - (c) admiring and deferential
  - (d) uncertain but optimistic
74. The author most likely mentions the results of Cramer's extension of Evanston's experiment in order to-
- (a) show that Cramer's hypothesis was correct while Evanston's hypothesis turned out to be incorrect
  - (b) show that Evanston's hypothesis was correct, while Cramer's hypothesis turned out to be incorrect
  - (c) demonstrate that while both experiments were scientifically rigorous, neither ended up being scientifically valid
  - (d) illustrate that the principle of subconscious decisions continues to work even when less information is available
75. It can be inferred that the critics referred in line 38 believed the excellent results of the two experiments had less to do with the innate decision-making of the subjects than with
- (a) the excellent decision-making of Evanston and Cramer
  - (b) the expertise of Malcolm Gladwell, who originated the theory
  - (c) the use of videotape as a method of choosing candidates
  - (d) their unconscious use of visual stereotypes in making their selections

### Passage - 2

The economic condition of the low-income regions of the world is one of the great problem of our time. Their progress is important to the high income countries, not only for humanitarian and political reasons but also because rapid economics growth in the low income countries could make a substantial contribution to the expansion and prosperity of the world economy as a whole.

The governments of most high-income countries have in recent years undertaken important aid programs, both bilaterally and multilaterally and have thus demonstrated their interest in the development of low-income countries. They have also worked within the General Agreement on Tariffs and Trade for greater freedom of trade and, recognizing the special problems of low income countries, have made special trading arrangements to meet their needs. But a faster expansion of trade with high-income countries is necessary if the low-income countries are to enjoy a satisfactory rate of growth.

It is necessary to recognized however, that in furthering the developed of low-income countries, the high-income countries can play only a supporting role. If development is to be successful, the main effort must necessarily be made by the people of the low-income countries. The high-income countries are, moreover, likely to provide aid and facilitate trade more readily and extensively where the low-income countries are seen to be making sound and determined efforts to help themselves, and thus to be making effective use of their aid and trade opportunities.

Severe damage has been done by inflation. A sound financial framework evokes higher domestic savings and investment as well as more aid and investment from abroad. Budgetary and monetary discipline and a more efficient financial and fiscal system help greatly to mobilize funds for investment and thereby decisively influence the rate of growth. Foreign aid should also be efficiently applied to this end.

The energies of the people of low-income countries are more likely to be harnessed to the task of economic development where the policies of their governments aim to offer economic opportunity for all and to reduce excessive social inequalities.

Development plans have tended to concentrate on industrial investment. The growth of industry depends, however, on concomitant development in agriculture. A steady rise in productivity on the farms, where in almost all low-income countries a majority of the labor force works, is an essential condition of rapid over-all growth satisfactory development of agriculture is sector and to feed the growing urban population without burdening industrial of payments with heavy food imports.

76. The economic conditions of low-income countries are important to high income countries because of
- I. economic reasons
  - II. political reasons
  - III. cultural reasons
- (a) I only                      (b) III only                      (c) I and II only                      (d) II and III only
77. According to the passage, governments of most high-income countries have
- (a) not worked for freer with low-income countries
  - (b) undertaken important aid programmes for low-income countries
  - (c) injected massive doses of capital into low-income countries
  - (d) provided training programmes for ;low-income country entrepreneurs
78. The major subject with which passage is concerned is
- (a) trade policies of high-income countries toward low-income countries
  - (b) foreign trade problems of low-income countries
  - (c) fiscal and monetary problems of low-income countries
  - (d) trade arrangements under the GATT organization

79. If low-income countries except aid from high-income countries, they must do all of the following except
- (a) put their own houses in order first
  - (b) learn from the experience of developed countries
  - (c) curb inflation
  - (d) de-emphasize agriculture development in favour of industrial growth
80. Which of the following is mentioned for its influence upon the rate of economic growth?
- (a) an efficient financial and fiscal system
  - (b) a trade surplus
  - (c) a democratic government
  - (d) little reliance upon foreign aid
81. Industrial growth depends upon a parallel growth of the
- |                         |                      |
|-------------------------|----------------------|
| (a) labour force        | (b) agricultural     |
| (c) balance of payments | (d) urban population |
82. The passage states that participation of high-income countries should be limited to
- (a) 10 percent of their GNP
  - (b) a supporting role
  - (c) regulations stipulated by GATT
  - (d) what low-income countries can absorb
83. In order to better enlist the support of the population in economic development efforts, low-income countries should
- (a) not accept more foreign aid than they can use
  - (b) budget the capital wisely
  - (c) reduce excessive social inequalities
  - (d) concentrate on commercial development
84. People will be motivated to work if they are offered
- |                     |                               |
|---------------------|-------------------------------|
| (a) social equality | (b) better working conditions |
| (c) more money      | (d) shorter hours             |

### Passage - 3

The pollution of the physical environment has contaminated our minds also, The simplicity and innocence of the days of yore are not to be seen. Rapid development in science and technology and tremendous increase in the production of wealth have made us materialistic Materialism has rather overpowered us, and we are engrossed in the mad race of earning and spending. We are thus, "wasting" our powers and there is little we see in Nature that is "ours". Materialism seems to be sounding the final death knell of humanism and spiritualism, which indeed made life worth living. We are steadily losing faith in higher ideals and values and are coming to regard the accumulation of wealth as our be - all and end - all. Love for window beings, sympathy and concern for the downtrodden do not stir us any more, and honesty and integrity in our public life are considered as a song of foolishness. The increasing hold of Mammon over us has intensified dowry evil, and most of us do not feel qualms of conscience in burning alive our wives and daughters - in - low just for a few pieces of silver. Matrimonial negotiations are shamelessly carried on as

if the sale purchase of property were the object of bargain. All sense of human values seems to be evaporating from our minds, and we are steadily but surely ourselves into be bottomless pit of the fire of gross materialism.

85. In what way has the pollution of the physical environment contaminated our minds?  
 (a) We are always under conditions of nervous breakdown  
 (b) Life today has no longer remained an innocent affair  
 (c) Mental illness are the order of the day  
 (d) We do not enjoy the beauties of nature
86. The gross materialism of today owes its origin to  
 (a) great strides made in science and technology and a huge increase in the production of wealth  
 (b) the mad race of armaments and an acute struggle for existence  
 (c) the natural drying up of spiritualism and the consequent drying up of humanism  
 (d) None of these
87. According to the author  
 I. Dowry has its justification in the modern world.  
 II. Materialism is responsible for the evil of dowry.  
 III. Nature appears to be holding no charms for the materialistic modern man  
 (a) II only                      (b) I only                      (c) III only                      (d) II and III only
88. The title that best express the idea of the passage is :  
 (a) Evils of pollution  
 (b) Materialism - an insight  
 (c) Pollution of the physics environment and increasing hold of materialism  
 (d) Gross materialism of the modern life

**Directions for questions 89 to 92 :** For the word given at the top of each table, match the dictionary definitions on the left (a, b, c, d) with their corresponding usage on the right (E, F, G, H). Out of the four possibilities given in the boxes below the table, select the one that has all the definitions and their usages most closely matched.

89. FORCE

	Dictionary definition		Usage
A.	Physical Power	E.	The slow development of greater becomes a force from
B.	Influence	F.	The agitators were out in full force at the Parliament today.
C.	Group or a collection	G.	The force fo wind has brought down many trees.
D.	Moral strength	H.	Kumar, a retired politician is still a force in national politics.

(D)	
A	G
B	H
C	E
D	F

(B)	
A	E
B	F
C	G
D	H

(C)	
A	G
B	H
C	F
D	E

(D)	
A	H
B	E
C	G
D	F

90. PRSUED

	Dictionary definition		Usage
A.	To follow in an effort to overtake or capture	E.	The lady in green was pursued by many suitors.
B.	To proceed along the course of	F.	She relentlessly pursued the argument.
C.	To carry further	G.	A ship that pursued the southern course, was spotted on the horizon.
D.	To court	H.	The fox was being pursued by the hounds.

(A)	
A	H
B	G
C	F
D	E

(B)	
A	G
B	H
C	E
D	F

(C)	
A	E
B	G
C	H
D	F

(D)	
A	H
B	F
C	G
D	E

91. BENIGN

	Dictionary definition		Usage
A.	Showing gentleness	E.	The tumour was benign.
B.	Favourable	F.	The chemical additive is environmentally benign.
C.	Harmless	G.	the opposition demanded a policy with benign consequences.
D.	Not malignant	H.	He had a benign smile on his face.

(A)	
A	H
B	G
C	F
D	E

(B)	
A	E
B	F
C	H
D	G

(C)	
A	G
B	H
C	F
D	E

(D)	
A	G
B	H
C	E
D	F

92. ECHO

	Dictionary definition		Usage
A.	Repetition of a sound	E.	Her resignation had an echo throughout the country.
B.	An imitation	F.	We found an echo of the past civilization while examining the artifacts.
C.	Vestige	G.	The echo of her cry was heard by all.
D.	Repercussion	H.	The capri is an echo of an earlier style.

(A)	
A	H
B	E
C	F
D	G

(B)	
A	G
B	H
C	F
D	E

(C)	
A	E
B	F
C	H
D	G

(D)	
A	G
B	H
C	E
D	F

**Directions for questions 93 to 95 :** The sentences given in each question when properly sequenced, form a coherent paragraph. Each sentences is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph.

93. A. The clinical guidelines in asthma therapy have now moved towards anti-inflammatory therapy from he existing bronchiodilators.  
 B. This is now being reflected in prescribing patterns.  
 C. In the U. S., combined prescription volumes of the major bronchiodilators peaked in 1991, though they still account for around half of the 65 million asthma prescriptions there.  
 D. During the same account for less than 10% of asthma prescriptions in the U. S.  
 a. ACDB                      b. ABCD                      c. CBAD                      d. CABD
94. I. In the Kamakura period (1192 - 1338), an age of great political unrest and social confusion, there emerged many new sects Buddhism offering hope of salvation to worries and peasants alike.  
 II. After gaining imperial patronage, Buddhism was propogated by the authorities throughout the country.  
 III. Buddhism was introduced to ?Japan from India via China and Korea around the middle of the sixth century.  
 IV. Buddhism not only flourished as a religion but also did much to enrich the country's arts and learning.  
 (a) CBAD                      (b) ABCD                      (c) ACBD                      (d) DCAB

95. I. Many women inevitably opt for part time jobs, which enable them to combine work and domestic duties.  
 II. But it is difficult for women, who also have household chores to do and children to take care of, to work at the same pace as men, who are not burdened with such responsibilities.  
 III. In Japan, companies generally expect their employees to put in long hours of overtime.  
 IV. Moreover, because salary and promotion in Japanese companies are often based on seniority, it is extremely difficult for women either re-entering the labour force or switching from part-time to full time work to climb the ladder.
- (a) ABCD                      (b) CBAD                      (c) CDAB                      (d) ABDC

**Directions for questions 96 to 100 :** Arrange the sentences A, B, C and D to form a logical sequence between sentences 1 and 6.

96. 1 . Cricket. The game that is religion India.  
 I. And now, it's turning into a cyber war too, with cricket websites mushrooming on the Web and battling it out online.  
 II. Most of the websites also offer an exhaustive database of cricket players, their records and the like, including a list of captains and hattricks.  
 III. To the online cricket enthusiast, the choice is near overkill.  
 IV. The Khel. for example, that is supposedly the first Indian website to offer live cricket updates on the web.  
 6. The Khel.com is a prominent member of the India world family of website, that went to Satyam in the no-famous Rs. 500-crore mega deal.
- (a) BACD                      (b) DCAB                      (c) ABDC                      (d) ABCD

97. 1. The main source of power in industrial undertaking is electricity  
 I. Electricity from water also required enormous river valley projects involving huge expenditure.  
 II. In contrast, electricity from atomic power stations will result in a tremendous saving in expenditure.  
 III. Besides, the mineral resources of the world required for generation of electricity are being rapidly depleted.  
 IV. But, the production of electricity needs huge quantities of coal.  
 6. The installation of atomic plants will help in meeting the shortage of these resources.
- (a). ABDC                      (b) ADC                      (c) ABCD                      (d) CDBA

98. 1. Every man is rich or poor according to the proportion between his hopes and enjoyments.  
 I. Of riches as of everything else, the hope is more than the enjoyment.  
 II. We consider them as the means to be used at some time for the attainment of wishes.  
 III. Running after them secures us from frustration.  
 IV. But no sooner do we set down to enjoy our acquisitions that we find them insufficient to fill up the gaps of life.  
 6. He is the richest who is content with the least, for constant is the wealth of nature.
- (a) DBCA                      (b) ABDC                      (c) ABCD                      (d) CDBA

99. 1. There is an old adage that India is a rich country where poor people live.  
 A. India is rich because of its biodiversity and the vast variety of flora and fauna.  
 B. The first International workshop on medicinal plants and their characteristics was held in the Himalayan region.  
 C. Medicine specialists from all over the world gathered to exchange their experience and expertise.  
 D. Indians are poor because they could not convert their knowledge of biodiversity to wealth.
6. This position has not changed much even today when the nation is knocking at the doors of the 21<sup>st</sup> century.
- a. BACD                      b. ABDC                      c. ABCD                      d. BCDA
100. 1. Once we have trustworthy electronic ID's and some access to a computer; we need a method of identifying and choosing our candidates.  
 A. But once we have an electronic voting system in place, it would be natural for candidates to conduct their entire campaign on television and the net.  
 B. Right now we put them through a physically grilling process, in which they fly round the country giving speeches and trying to fend off the press who is intent on revealing every last detail about their lives.  
 C. It doesn't seem to serve as a filter for stupidity through.  
 D. The system works, in that it ensures it will never get a real criminal in the President's office.
6. We will need a system that allows for that, but with modifications.
- a. BDCA                      b. ABCD                      c. CADB                      d. DABC

**Directions for questions 101 to 105:** Find the pair in the answer choices that bear similar relation to the pair given in the question.

101. Mind : Matter  
 a. Physical : Spiritual                      b. Abstract : Concrete  
 c. Action : Reflection                      d. Theory : System
102. Sprain : Fracture  
 a. Devotion : Blessing                      b. Excitement : Frenzy  
 c. Sleep : Snore                      d. Fever : Malaria
103. Cat : Claws  
 a. Potato : Tuber                      b. Ginger : Stem  
 c. Eagle : Talons                      d. Popeye : Spinach
104. Bead : Necklace :: ? : Chain  
 a. Ball                      b. Iron                      c. Link                      d. Strength

105. Poetry : Sonnet :: ? : Concerts  
a. Symphony                      b. Song                      c. Music                      d. Etude

**Directions for questions 106 to 110:** In each of the following questions, a part of the sentence has been left blank. Select the one, from among the four options followed by, which suits the best.

106. An act of justice closes the book on a misdeed; an act of vengeance \_\_\_\_\_.  
a. writes one of its own                      b. opens new books  
c. reopens the first chapter                      d. writes an epilogue
107. This is about \_\_\_\_\_ a sociological analysis can penetrate.  
a. as far as                      b. the out limits that  
c. just how far into the subject                      d. first the relative distance that
108. I'm always the first to admit that I have not accomplished everything that I \_\_\_\_\_ achieve five years ago.  
a. set out to                      b. went to                      c. thought to                      d. thought of
109. This is not the first that the management has done some \_\_\_\_\_.  
a. tough talk                      b. thought talking                      c. firm talk                      d. firm talking
110. In India the talent is prodigious, and it increases \_\_\_\_\_.  
a. each year                      b. year by year                      c. annually                      d. progressively

**Directions for questions 111 to 115:** For each of the words below, a contextual usage is given. Pick the word from the alternatives given that is most inappropriate in the given context.

111. Emaciate : I was shocked to see the horrific television pictures of emaciated prisoners.  
a. Wasted                      b. Taper                      c. Weak                      d. Thin
112. Pensive : He stared pensively out of the window  
a. Thoughtful                      b. Meditative                      c. Unconcerned                      d. Melancholic
113. Reprehensible : Ram said that they were behaving in the most reprehensible manner  
a. Disgusting                      b. Blameless                      c. Scandalous                      d. Unjustifiable
114. Subversion : He arrested in parliament on charges of subversion  
a. Revolution                      b. Upset                      c. Overthrow                      d. Compliance
115. Infringement : Infringement of the regulation is punishable by law  
a. Encroachment                      b. Abiding                      c. Intrusion                      d. Breach

**Directions for questions 116 and 117:** Choose the most Precise and Concise Statement.

116. a. The reason I m supporting Jaswant Singh is because his extensive background in foreign affairs has mad him uniquely qualified for a seat on this important subcommittee.  
b. The reason I m supporting Jaswant Sing is that his extensive background in foreign affairs has made him uniquely qualified for a seat on this important subcommittee.  
c. The reason in foreign affairs have made him uniquely qualified for a seat on this important subcommittee.  
d. The reason I m supporting Jaswant Sing because of his extensive background in foreign affairs has made him uniquely qualified for a seat on this important subcommittee.
117. a. A major landmark has the inclusion of the physically and mentally handicapped children into the mainstream of school life.  
b. A major landmark has been the inclusion of the physically and mentally children who are handicapped into the mainstream of school life.  
c. A major landmark has been the inclusion of the physically and mentally handicapped children into the mainstream of school life.  
d. A major landmark has been the inclusion of the physically and mentally handicapped children into the mainstream of school life.

**Directions for questions 118 to 120:** The following questions contain six statements followed by four sets of combinations of three. Choose the set in which the statements are logically consistent.

118. A. Some building are not sky-scrappers.  
B. Some sky-scrappers are not buildings..  
C. No structure is a sky-scrappers.  
D. All sky-scrappers are structures.  
E. Some sky-scrappers are buildings.  
F. Some structures are not buildings.  
a. ACE                      b. BDF                      c. CDE                      d. ACF
119. A. Smoking causes illness  
B. Ramesh smokes  
C. Ramesh may be ill  
D. Ramesh is a passive smoker  
E. Passive smoking is equivalent to smoking  
F. Smoking is more harmful than passive smoking

120. A. All players are strong  
 B. All men are strong  
 C. Strong players are men  
 D. Some players are women  
 E. Women players are strong  
 F. Some men are not strong  
 a. ACB                      b. ADE                      c. FAD                      d. None
121. A man buys 8 mangoes, 6 oranges and 10 guavas for Rs. 51. If he decides to buy 4 more mangoes, 4 less guavas and 3 more oranges, he needs to pay Rs 12 more to the shopkeeper. What is the cost of 3 guavas?  
 a. Rs. 1.5                      b. Rs. 4.50                      c. Rs. 3.0                      D. Rs. 6.0
122. An army was to be arranged for a drill, in a specified equal number of rows and columns so as to form a solid square and it was found that 89 men were less. The side of the square was then reduced by 1 and still, 24 men were less. Find the number of men in the army.  
 a. 1225                      b. 2500                      c. 1000                      d. 935
123. The average temperature of the town in the first four days of a month was 58 degrees. The average for the second, third, fourth and the fifth days was 60 degrees. If the temperature of the first day and the fifth day were in the ratio of 7 : 8, then what was the temperature of the fifth day?  
 a. 64 degrees                      b. 62 degrees                      c. 56 degrees                      d. None of these
124. In what ratio must a person mix three varieties of rice costing Rs. 10/kg, Rs. 12/kg and Rs.16/kg so that the mixture costs Rs. 14/kg?  
 a. 2 : 4 : 1                      b. 1 : 2 : 4                      c. 1 : 2 : 2                      d. None of these
125. The goods in a godown are to be moved to a different location. Twenty men can move all the goods in 185 days. If 20 men start the work and 10 men are deployed additionally after every 20 days, in how many days will the goods be transferred?  
 a. 98 days                      b. 105 days                      c. 78 days                      d. 95 days
126. A, B and C are paid Rs. 6300 for doing some piece of work together. A and B start the work and they continue to work together for 10 days. After that, A quits and C joins B. B and C, together complete the remaining work. How much money does B receive for his work, given that A can do the work in 30 days, B in 60 days and C in 90 days?  
 a. Rs. 2940                      b. Rs. 3160                      c. Rs. 2840                      d. Rs. 3480

127. The sum of the total strengths of English, Mathematics, and Physics classes is 1300. 470 students study only English, 295 study only Mathematics and 175 study only Physics. 105 students study exactly two subjects. How many students study all the subjects?  
 a. 350                      b. 300                      c. 255                      d. 250
128. Find the positive number which is 5 more than 14 times its reciprocal.  
 a.  $\frac{1}{7}$                       b. 7                      c. - 2                      d. None of these
129. A man spends Rs. 81 in buying some socks and ties. The socks cost Rs. 7 each and ties cost Rs. 3 each. What is the ratio of socks to ties when the maximum number of socks is purchased such that no extra rupee is given to the shopkeeper.  
 a. 3 : 2                      b. 4 : 1                      c. 5 : 2                      d. 4 : 3
130. The average weight of a group of 8 boys is 60 kg. Two boys A and B leave the group and two other boys C and D join the group. The new average of the group is 58 kgs. The weights of A and B are equal and weights of C and D were also equal. If a person whose weight is equal to weight of A is added to the group, the average weight of 9 persons would be 60 kg. What is the weight, of C in kg?  
 a. 66                      b. 72                      c. 58                      d. 68
131. If the radius of a circle is increased by 20%, its area is increased by:  
 a. 21%                      b. 40%                      c. 44%                      d. None of these
132. Everyday, a fruit seller sells half of his stock of apples. 10% of the stock kept overnight gets spoiled which he cannot sell on the next day. If a total of 661 apples got spoilt over 3 nights, how many apples did he start with?  
 a. 16000                      b. 8000                      c. 32000                      d. None of these
133. A, B and C invest in a partnership in the ration of 6 : 11 : 13 . If the ratio of their returns in 30 : 11 : 26, find the ratio of the investment periods.  
 a. 4 : 1 : 2                      b. 4 : 2 : 3                      c. 5 : 1 : 3                      d. 5 : 1 : 2
134. To build a temple in a colony, donations have to be collected from its residents. 80% of the donations have been collected from the residents, with an average donation of Rs. 800. These people represent 75% of the total residents. Find the average donation from the remaining people if all the remaining people also donate.  
 a. Rs. 500                      b. Rs. 600                      c. Rs. 700                      d. None of these
135. There are 60 students writing their Hindi Exam, 72 students writing their French Exam and 96 students writing their English Exam. If all classrooms are to contain equal number of students and all the students in that classroom writing the same examination, what is the minimum number of classrooms required to accommodate all the students?  
 a. 19                      b. 38                      c. 13                      d. None of these

136. For a loan of Rs. 32,400 that I gave to my friend Ramesh, he promised to pay me the amount in monthly installments starting with a certain amount and increasing the installments every month a fixed amount of Rs. 100. In this way he could clear off the loan in 24 months. How much was the first installment?
- a. Rs. 150                      b. Rs. 200                      c. Rs. 250                      d. None of these
137. In an examination a student appeared for six papers having equal maximum marks. His marks in these papers were in the ratio 2 : 3 : 4 : 5 : 6 : 7. In all papers together, the students obtained 50% of total marks. What is the number of papers in which he got more than 50% marks?
- a. 1                                  b. 2                                  c. 3                                  d. 4
138. An item has a marked price of Rs. 2568. The rate of value added tax (VAT) applicable to that item is 7%. The buyer wants the shopkeeper to reduce the price to such an extent that he has to pay Rs. 2568 inclusive of VAT. Find the reduction needed to the marked price of the item.
- a. Rs. 168                      b. Rs. 179.67                      c. Rs. 193.29                      d. Rs. 152
139. The perimeter of a square plot of land is 12 meters and that of another is 16 meters. Perimeter of a square plot whose area is equal to the sum of the areas of these two square plots will be
- a. 7 m                              b. 20 m                              c. 24 m                              d. None of these
140. When a couple got married 10 years ago, their ages were in the ratio of 5 : 4 Today, the husband is older than his wife by one sixth of her age. What was the age of wife at the time of marriage.
- a. 20                                  b. 24                                  c. 25                                  d. None of these
141. A man willed his wife one-third of his estate and remaining two-third to his son, should one be born, but in case of a daughter born, two-third to go to wife and one-third to go to daughter. After the man's death, twins were born-a boy and a girl. The estate was divided as per man's will by maintaining the proportions. What fraction of the total value did the daughter get in the estate?
- a.  $\frac{1}{5}$                                   b.  $\frac{1}{7}$                                   c.  $\frac{2}{5}$                                   d.  $\frac{4}{7}$
142. Anil invests in 10% stock at Rs. 90. He calculates that by selling all the existing shares at Rs. 90 per share and then by investing the proceeds in 8% stock at Rs. 140, his returns will decrease by a certain percentage. What is that percentage, approximately?
- a. 49%                                  b. 52%                                  c. 60%                                  d. 110%
143. Which one of the following sets of lengths of sides does not relate to that of a right angled triangle:
- a. 3, 4, 5                                  b. 5, 12, 13                                  c. 7, 24, 25                                  d. 9, 12, 16
144. A can stuff advertising circulars into envelopes at the rate of 45 envelopes per minutes and B requires a minute and a half to stuff the same number of envelopes. Working together, how many minutes will take A and B to stuff 300 envelopes?
- a. 15                                  b. 4                                  c. 3.5                                  d. 12

145. Two-fifth of a number exceeds one-seventh of the same by 45. The number is:  
 a. 125                      b. 150                      c. 175                      d. 200
146. A triangle has angles in the ratio 4 : 3 : 2. How many degrees are there in the largest angle?  
 a. 40                      b. 60                      c. 80                      d. None of these
147. What are the values of N such that  $\frac{N}{(N+1)}$  is greater than 1?  
 a.  $N = 1$                       b.  $-1 < N < 0$                       c.  $N > -1$                       d. None of these
148. At a certain party, the ratio of boys to girls was 5 to 3. After sometime, 10 boys left the party and now the number of boys is equal to number of girls. How many persons were originally present in the party?  
 a. 48                      b. 32                      c. 64                      d. None of these
149. A train crosses two bridges of length 500 m and 280 m in 35 seconds and 24 seconds respectively. Find the length of the train  
 a. 200 m                      b. 250 m                      c. 300 m                      d. None of these
150. A sum of Rs. 41 was divided among 50 boys and girls. Each boy gets 90 paise and each girl gets 65. The number of boys is:  
 a. 16                      b. 34                      c. 14                      d. 36
151. The area of the largest circle that can be drawn inside a square of size 14 cm. is:  
 a. 154 sq. cm.                      b. 616 sq. cm.                      c. 196 sq. cm.                      d. None of these
152. A beats B by 100 m in race of 1200 m and B beats C by 200 m in a 1600 m race. Approximately, by how many meters can A beat C in a 1500 m race?  
 a. 150 m                      b. 250 m                      c. 300 m                      d. 350 m
153. An even number can be expressed as the square of an integer as well as a cube of another integer. Then the number has to be necessarily divisible by:  
 a. 32                      b. 64                      c. 126                      d. Both (a) and (b)
154. To make a tent, poles are planted along the perimeter of a square field at a distance of 5 meter from each other and the total number of poles used is 20. What is the area (in sq. meters) of the square field?  
 a. 500                      b. 400                      c. 900                      d. None of these
155. If the diagonal of a square is decreased by 15%, then the area of the square is decreased by:  
 a. 22.5%                      b. 72.25%                      c. 27.75%                      d. None of these
156. The difference between simple interest and compound interest on a certain sum of money for 2 years at 10% p.a. is Rs. 4200. The sum is:  
 a. Rs. 20000                      b. Rs. 16000                      c. Rs. 24000                      d. None of these

157. Two motorcyclists leave the same point, one towards the North and other towards the East. The first motorcyclist travels at a speed of 5 km/hr more than that of the second. If after four hours the distance between the two motorcyclists is 100 km, find the speed of the first motorcyclist.  
 a. 60 km/hr                      b. 40 km/hr                      c. 20 km/hr                      d. None of these
158. An item is sold at 20% profit. If it had been sold at 20% loss, the selling price would have been Rs. 100 less. Find the cost of the item.  
 a. Rs. 250                      b. Rs. 500                      c. Rs. 125                      d. None of these
159. Two persons A and B agree to meet at a place between 11 a.m. and 1 p.m. The first one to arrive waits for an hour, before leaving. If the time of their arrivals is independent, find the probability that they will meet.  
 a.  $\frac{2}{5}$                       b.  $\frac{3}{5}$                       c.  $\frac{8}{15}$                       d.  $\frac{7}{16}$
160. If 200 grams of silver is beaten out to form a leaf of area 40 sq. m., find how many such leaves are required for the stack to be of half cm thickness, if it is given that the density of silver is 25 gram/cm<sup>3</sup>?  
 a. 20,000                      b. 25,000                      c. 40,000                      d. None of these
161. If  $4 \frac{A}{B} = \frac{5}{C}$  then  $25B^2$  equals:  
 a.  $20 A^2 C^2$                       b.  $16 A^2 C$                       c.  $16 A^2 C^2$                       d. None of these
162. A river-flows at 12 km/hr. A man who can row at 5 km/hr in still water has to cross it in the least possible time. The distance covered by the man is how many times the width of the river?  
 a. 2.3                      b. 2.6                      c. 1.8                      d. Cannot be determined
163. If  $2667 \times 55 = 146685$ , the product of two numbers 266.7 and 0.55 is equal to  
 a. 14.6685                      b. 146.685                      c. 1466.85                      d. None of these
164. Fresh dates contain 30% water by weight while dried dates contain 2% water by weight. What is the weight of dry dates available from 5 kg of fresh dates?  
 a. 3.5 kg                      b. 3.57 kg                      c. 3.72 kg                      d. 3.67 kg
165. A certain sum was borrowed x years ago at 20% p.a. simple interest. If at present, the principal is 300% more than the interest, what percentage will it be of the interest 2 years from now?  
 a. 100%                      b. 153%                      c. 120%                      d. 125%
166. Shalini has forgotten her six-digit bank account number but only remembered that it was of the form X515X0 and was divisible by 36. What is the value of X?  
 a. 4                      b. 7                      c. 8                      d. 9

167. A and B were contesting an election for the head boy of their school, the total number of students being 1600. B was declared winner initially, but due to some malpractices that had occurred, reelection was held. In the second election, A was the winner by twice the victory margin in the first election. The ratio of the majority vote in the first election to the second election being 5 : 6. How many more people voted for A in the second election?  
 a. 200                      b. 400                      c. 600                      d. 1000
168. A invests Rs. 19000 in a 5% bonds at 95. He then sells out and invests the proceeds in 6% bonds at 80 so that his annual income increases by Rs. 200. At what price did he sell out his bonds?  
 a. Rs. 90                      b. Rs.95                      c. Rs.80                      d. None of these
169. A boat sails 15 km of a river stretch upstream in 5 hours. How long will it take to cover the same distance downstream, if the speed of the current is one-fourth the speed of the boat in the still water?  
 a. 1.5 hours                      b. 1.8 hours                      c. 2.0 hours                      d. None of these
170. Rs. 1, 87,400 were invested in 15% debentures at a discount of 20%. What is the return on investment?  
 a. 35%                      b. 18%                      c. 24.5%                      d. None of these
171. A has 3 sons P, Q and R. P and Q are twins. The sum of the three sons' ages is twice the age of R. Three years earlier; R's age was 3.5 times Q's age. What will be Q's age after three years?  
 a. 8 years                      b. 12 years                      c. 15 years                      d. 18 years
172. A certain tank has two pipes A and B that can either fill it or empty it at the same respective rates depending on the requirements. If pipe A only is used to fill the tank for the time that both pipes together take it to fill the tank, then  $\frac{3}{5}$ th of the tank is filled. If now pipe A is used to fill the tank while B is used to empty it, then find what percent of the tank is unfilled in half the time that it takes for the tank to get empty?  
 a. 90%                      b. 60%                      c. 40%                      d. None of these
173. R kg of cheese is bought by a mess to cook dinner to N players. On Monday M players decided to eat out and the rest had dinner in the mess ( $M < N$ ). If the excess cheese left unused on Monday is to be used on Tuesday, then how many kg of cheese will be bought on Tuesday to feed N players.  
 a.  $\frac{RM}{N}$                       b.  $R - M$                       c.  $R \left(1 - \frac{M}{N}\right)$                       d. None of these
174. A certain fraction becomes 2, when 7 is added to its numerator and it becomes 1, when 2 is subtracted from its denominator. What is the numerator of the fraction?  
 a. 3                      b. 4                      c. 5                      d. None of these
175. A Photocopier has to make 'n' copies of each of the 'b' books; where  $nb \leq 200$ . If the photocopier decided to reduce the number of copies per book by 25; he can photocopy 3 more books with the given resources of pages. Assume that each book is identical in terms of number of pages. What is the value of 'nb'?  
 a. 125                      b. 150                      c. 200                      d. 175

176. The price of a share increased by 20% in the morning session of trading but later on, fell by 25% in the afternoon session. As compared to its opening price, by what percentage has the share gained/lost at the end of the day?
- a. Lost by 5%                      b. Gained by 5%                      c. Gained 2%                      d. None of these
177. Sixty percent of the population of a town is eligible to vote. Forty percent of the eligible voters are educated. Out of the total population, 30% are eligible female voters, of which only one-third are educated. What fraction of the male voters are educated.
- a.  $\frac{17}{30}$                       b.  $\frac{13}{17}$                       c.  $\frac{17}{27}$                       d.  $\frac{13}{23}$
178. A has invested Rs. 35000 in a bank at a rate of 7%. How much money should he invest additionally at a rate of 9% so that he gets a return if 8% on his total investment?
- a. Rs. 32000                      b. Rs. 35000                      c. Rs. 30000                      d. None of these
179. If the sum of the digits of a two-digit positive integer is one-third the number, then what is the digit in its unit's place?
- a. 2                      b. 6                      c. 7                      d. Cannot be determined
180. Seema agreed to coach a boy for an examination for a period of 30 days at the rate of Rs. 3 per day. Also she was to lose Rs. 1 for each day she remained absent. At the end of the contract she was paid Rs. 50. Therefore, she worked for
- a. 20 days                      b. 15 days                      c. 12 days                      d. 10 days

# Answers and Explanations

121. b  $8m + 60 + 10g = 51$  ... (i)  
 $12m + 90 + 6g = 63$  ... (ii)

Multiply (i) by  $\frac{3}{2}$  and subtract (ii) from it.

This gives,  $9g = \frac{27}{2}$

$\therefore 3g = 4.50$   
Hence (b)

122. c Let the no of men in the army is N and let the side of the first square = x. Then  
 $N + 89 = x^2$   
and  $N + 24 = (x - 1)^2$   
Solving both, we get  $N = 1000$ .

123. a Sum of temperatures of first four days =  $4 \times 58$   
Sum of temperatures of last four days =  $4 \times 60$   
Difference between the last and the first day = 8  
 $8K - 7K = 8 \Rightarrow K = 8$   
Temperature in fifth day =  $8 \times 8 = 64$  degrees.

124. a Work with the options as for (a) option-

$$\frac{2 \times 10 + 4 \times 12 + 1 \times 16}{2 + 4 + 1} = 14$$

125. d  $(185 \times 20)$  Men - Days =  $\{(20 \times 20) + (30 \times 20) + (40 \times 20) + (50 \times 20) + (60 \times 20) \dots\}$  Men - Days.  
Or,

$3700 = \{400 + 600 + 800 + 1000 + 1200 \dots\}$   
The first 4 terms on the RHS side, add to more than 2800 Men-Days which is 900 Men-days short of the LHS. This means after  $20 \times 4 = 80$  days of work, 900 Men-days of work is left. From 81st day onwards till the 100<sup>th</sup> day, a total of 60 men are working. They will complete the 900 Men-days of work in  $\frac{900}{60} = 15$  more days. So, the total work will be completed in  $80 + 15 = 95$  days.

126. a A and B working together can complete the work in 20 days so in 10 days they will complete  $\frac{1}{2}$  work. Out of

$$\frac{1}{2} \text{ A's share} = \frac{2}{3} \left( \frac{1}{2} \right) \text{ and B's share} = \frac{1}{3} \left( \frac{1}{2} \right).$$

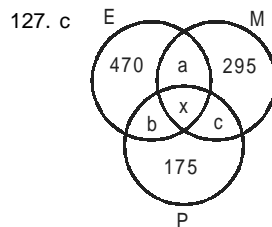
In the same way remaining  $\frac{1}{2}$  will be covered by B and C in

the ratio 3 : 2. So B's share =  $\frac{3}{5} \left( \frac{1}{2} \right) = \frac{3}{10}$  and C's

$$\text{share} = \frac{2}{5} \left( \frac{1}{2} \right) = \frac{1}{5}$$

$$\therefore A : B : C = \frac{1}{3} : \left( \frac{1}{6} + \frac{3}{10} \right) : \frac{1}{5} \Rightarrow 5 : 7 : 3$$

$$\text{So B will receive} = \frac{7}{15} \times 6300 = 2940.$$



$$1300 = 470 + 295 + 175 + (a + b + c) + x$$

Where  $a + b + c = 105$   
 $x = 255$

128. b Work out with the options.

129. a Work out with the option. First option  $3 : 2$  meant  $3 \times 7 + 2 \times 3 = 27$  which is a factor of 81.

130. d Weight (A + B) - Weight (C + D) = 16  
or  $2A - 2C = 16$   
or  $A - C = 8$   
This time total weight of group =  $8 \times 58$   
When a person equal to wt. of A is added, total weight becomes =  $9 \times 60$   
 $\therefore$  Wt. of A = 76 kg  
 $\therefore$  Wt. of C = 68 Kg.

131. c Apply  $a + b + \frac{ab}{100}$  formula on radius.

$$\text{We get } 20 + 20 + \frac{20 \times 20}{100} = 44\%$$

132. b We can work with options. For 16000 he sells off 8000 and out of remaining 8000, 10% or 800 are spoiled which is more than 661 so it cannot be the right answer. In case of 8000 he sells off 4000 and out of remaining 4000, 10% or 400 are spoiled. Again out of

$$\frac{3600}{2} = 1800, 1800 \text{ are spoiled and on third day}$$

$$\frac{1620}{2} = 810, 810 \text{ are spoiled. So, total number of apples spoiled} = (400 + 180 + 81) = 661.$$

133. d Profit is proportional to the product (investment  $\times$  time)

$$\text{ratio of time periods} = \frac{P_1}{I_1} : \frac{P_2}{I_2} : \frac{P_3}{I_3}$$

$$= \frac{30}{6} : \frac{11}{11} : \frac{26}{13}$$

$$= 5 : 1 : 2$$

134. b We are given

$$\frac{3}{4}R \times (800) = \frac{80}{100}D \quad \dots (i)$$

We have to find out (N) such that

$$\frac{R}{4}(N) = \frac{20}{100}D \quad \dots (ii)$$

by (1) and (2) we get  $N = 600$ .

135. a HCF (60, 72, 96) = 12

$$\text{No. of class rooms required} = \frac{60}{12} + \frac{72}{12} + \frac{96}{12} = 19$$

136. b  $32,400 = x + (x+100) + (x+200) + \dots + (x + 2300)$ .

$$32400 = 24x + \frac{24}{2} [0 + 2300]$$

$$\Rightarrow x = 200$$

137. c Lets assume that the marks are  $2x, 3x, 4x, \dots$

$$\Rightarrow \text{total marks} = 54x$$

so max. marks in every paper (as each is of equal

$$\text{marks}) = \frac{54x}{6} = 9x$$

$$50\% \text{ of } 9x = 4.5x$$

So he has got more than 50% in 3 papers ( $5x, 6x, 7x$ )

138. a Let the reduced price be  $x$  Rs.

$$x \times 1.07 = 2568 \Rightarrow x = 2400 \text{ Rs.}$$

hence reduction will be of 168 Rs.

139. b Sum of area of these two plots =  $3^2 + 4^2 = 25 \text{ m}^2$

$$\Rightarrow \text{side} = 5 \text{ m}$$

$$\Rightarrow \text{Perimeter} = 5 \times 4 = 20 \text{ m}$$

140. a Let the present age of husband and wife be  $H$  and  $W$ .

$$H = W + \frac{W}{6} \quad \dots (i)$$

and

$$\frac{H-10}{W-10} = \frac{5}{4} \quad \dots (ii)$$

Solving both,  $W = 30$  so at the time of marriage wife was 20 yrs. old.

141. b As per the statements of the question, we can write

Ratio of wife : Ratio of daughter =  $2 : 1$

Ratio of wife : Ratio of son =  $1 : 2$

Therefore, Ratio of  $W : S : D = 2 : 4 : 1$

So, the fraction of the total value that the daughter

$$\text{gets is } \frac{1}{4+2+1} = \frac{1}{7}.$$

142. b Assuming face value in both the cases is 100 Rs.

let he sells off  $n$  shares

Amount he get on selling  $n$  shares =  $90n$

and return on  $n$  shares was =  $10n$ .

now he invests the proceeds in next stock at 140

$$\text{So, no. of shares he can purchase} = \frac{90n}{140}$$

$$\text{on this he get return as} = 8 \times \left( \frac{90n}{140} \right) = \frac{36}{7}n$$

so the percent decrease in return

$$= \frac{\frac{36}{7}n - 10n}{10n} \times 100 = 49\%$$

143. d Option (d) does not satisfy the relation  $a^2 + b^2 = c^2$ .

144. b A can stuff 45 envelopes in one minute and B can

stuff 30 envelopes in one minute. So A and B together

can stuff 75 envelopes in one minute. So, it will take 4

min to stuff 300 envelopes.

145. c  $\frac{2}{5}n - \frac{1}{7}n = 45 \Rightarrow n = 175$ .

146. c largest angle =  $\frac{4}{9} \times 180 = 80$ .

147. d work with the options.

148. d Let the boys number was  $5k$  and number of girls was

$$3k$$

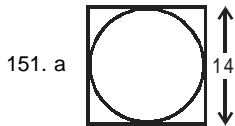
$$5k - 10 = 3k$$

$$k = 5$$

originally were present  $8k = 40$ , persons

149. a  $\frac{L+500}{L+280} = \frac{35}{24} \Rightarrow L = 200\text{m}$

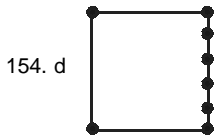
150. b  $B + G = 50 \quad \dots (i)$   
 $0.9B + 0.65G = 41 \quad \dots (ii)$   
 solving both we get  $B = 34$ .



The diameter of the circle = 14 cm  
 so the area is  $\pi(7)^2 = 154 \text{ sq cm}$

152. c A beats B by 100 m in race of 1200 m  
 $\therefore S_A : S_B = 12 : 11$  and B beats C by 200 m  
 in the race of 1600 m  
 $\therefore S_B : S_C = 8 : 7$   
 If A covers 1500 m then C will cover  $\frac{77}{96} \times 1500 \cong 1203\text{m}$   
 i.e. A beats C by 300 m approximately.

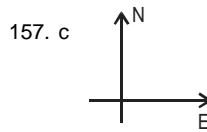
153. d  $2N = I_1^2 = I_2^3$   
 The minimum even number of this kind is  $64 = 8^2 = 4^3$   
 so it will be divide by both 32 and 64.



After fixing 4 poles on corners, rest 16 have to be divided equally as 4 on each side. The edge of square will be 25 m as they are 5 m away from each other. So the area of the square =  $625 \text{ m}^2$ .

155. c Area of square (diagonal)<sup>2</sup>  
 Using  $a + b + \frac{ab}{100}$  formula, is directly proportional to  
 Area will decrease by,  $-15 - 15 + \frac{225}{100} = -27.75\%$

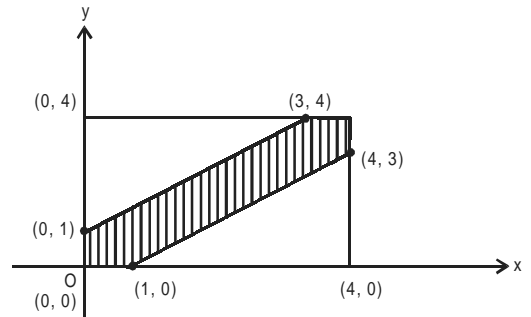
156. d  $(CI)_2 - (SI)_2 = \frac{pr^2}{100^2}$   
 $P = \frac{4200 \times (100)^2}{100} = 42,000$ .



Speed of first one =  $v \text{ km/hr}$   
 Speed of second one =  $(v - 5) \text{ km/hr}$   
 After 4 hrs distance covered by first one =  $4v \text{ km}$   
 and by second one =  $4(v - 5) \text{ km}$ .  
 $\therefore (4v)^2 + [4(v-5)]^2 = (100)^2$   
 $\therefore v = 20 \text{ km/hr}$ .

158. a  $1.20 \text{ CP} - 0.80 \text{ CP} = 100$   
 $\text{CP} = 250 \text{ Rs}$ .

159. d Let A reaches  $x$  hours after 11 am and B reaches  $y$  hours after 11 am. Both  $x$  and  $y$  can take values from 0 to 4.



As their time of arrivals are independent of each other, the sample space is a square of side 4 units. As per the condition of the problem, they will meet each other, if and only if

$$|x - y| \leq 1 \text{ or, } -1 \leq (x - y) \leq 1$$

or,

$$x - y - 1 \leq 0 \text{ and } x - y + 1 \geq 0$$

The region satisfying both these conditions, is shaded in above figure,

$$\text{required probability} = \frac{\text{area}(\text{shaded region})}{\text{area}(\text{square})}$$

$$= \frac{(4)^2 - \left\{ \frac{1}{2} \times 3 \times 3 + \frac{1}{2} \times 3 \times 3 \right\}}{4^2} = \frac{7}{16} \text{ option (d).}$$

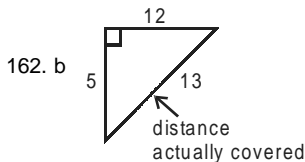
160. b Let thickness of one leaf =  $t \Rightarrow 40 \times (100)^2 \times t = \frac{200}{25}$   
 $\Rightarrow t = \frac{1}{5 \times 10^4} \text{ cm}$

$$\Rightarrow \text{number of leaves required} = \frac{\frac{1}{2} \text{ cm}}{\frac{1}{5 \times 10^4} \text{ cm}} = 25,000$$

option (b).

161. c  $4 \frac{A}{B} = \frac{5}{C} \Rightarrow 5B = 4AC$

$$\therefore 25B^2 = 16A^2C^2.$$



As man has to cover it in least possible time he will start moving perpendicular to the direction of the river. After one hour, the distance diagram will be as shown above. Every subsequent hour, the distances will remain proportional. So the ratio of distance actually

covered to the width of river is  $\frac{13}{5} = 2.6$ .

163. b The decimal will come after three places from the unit's place.

164. b Fresh dates contains 30% water and 70% pulp and dried dates contains 2% water and 98% pulp. Now in 5 kg of fresh dates, pulp = 3.5 kg, which will be equal to 98% of dried dates.

$$98\% (x) = 3.5 \text{ kg}$$

$$x = \frac{3.5 \times 100}{98} = 3.57 \text{ kg}.$$

165. b Let the principal amount be, P.

$$\text{interest after } x \text{ years} = P \times \left( \frac{20}{100} \right) \times x = \frac{Px}{5}$$

$$\text{given, that } P = 4 \times \left( \frac{Px}{5} \right)$$

$$\Rightarrow x = \frac{5}{4} \text{ years}$$

Two years from now, total time is

$$\left( \frac{5}{4} + 2 \right) = \left( \frac{13}{4} \right) \text{ years}$$

$$\text{interest} = P \times \left( \frac{20}{100} \right) \times \left( \frac{13}{4} \right) = \frac{13}{20} P$$

$$\frac{\text{Principal}}{\text{Total Interest}} = \frac{P}{\frac{13P}{2}} = \frac{20}{13} = 1.53$$

$\Rightarrow$  it will be 153%. Option (b) is correct.

166. c As  $X515X0$  is divisible by 36, it should be divisible by 9 and 4. So, we can say  $2x + 2$  should be divisible by 9. Only  $x = 8$  satisfies the above condition. Therefore, the answer is option (c).

167. c Initially when B was declared winner, we write  $B_1 + A_1 = 1600$  ... (i) where  $B_1$  and  $A_1$  are the votes casted for B and A respectively

Later on, when A was the winner

$$A_2 + B_2 = 1600 \quad \dots \text{(ii)}$$

Also, as per the given condition

$$A_2 - B_2 = 2(B_1 - A_1) \quad \dots \text{(iii)}$$

and

$$\frac{B_1}{A_2} = \frac{5}{6} \quad \dots \text{(iv)}$$

Solving (i), (ii), (iii) and (iv), we get

$$A_2 = 1200, \quad A_1 = 600$$

$$\text{So, } A_2 - A_1 = 600$$

Option (c) is the answer.

168. c Number of bonds he has =  $\frac{19000}{95} = 200$  and income

= 1000 Rs. Let us say, he sold out at  $x$  Rs./share so amount received by him =  $200x$  with which he purchased 6% bonds at 80.

$$\text{no of bonds} = \frac{200x}{8} = 2.5x \quad \text{and income} = 6 \times 2.5x$$

$$= 15x. \text{ Now the income has increased by Rs. 200.}$$

$$\text{So } 15x = 1200$$

$$\therefore x = 80 \text{ Rs.}$$

169. d Let speed of boat =  $v$

$$\therefore \text{speed of current} = \frac{v}{4}$$

$$v - \frac{v}{4} = \frac{15}{5} \Rightarrow v = 4 \text{ km/hr.}$$

$$\text{Time taken to cover the same downstream} = \frac{15}{v + \frac{v}{4}}$$

$$= \frac{15}{5} = 3 \text{ hrs.}$$

170. d Let one debenture costs Rs.x.  
 discount = 20%  $\Rightarrow$  cost of one debenture = 0.80x  
 return = 15%  $\Rightarrow$  return on one debenture = 0.15x  
 $\Rightarrow$  return on the investment =  $\frac{0.15x}{0.80x} \times 100 = 18.75\%$   
 $\Rightarrow$  (d) is the correct answer.

171. a Let the ages of P and Q be x years each and age of R is y years.  $2x + y = 2y$  ... (i)  
 $(y - 3) = 3.5(x - 3)$  ... (ii)  
 From equation (i) and (ii),  $x = 5$  yrs.

172. d Let volume of the tank = V liters.  
 Let pipe A, takes a hours & pipe B takes b hours to fill or empty the tank.  
 Time in which the tank gets filled, when both pipes A and B are used to fill it.

$$= \frac{V}{\frac{V}{a} + \frac{V}{b}} = \left( \frac{ab}{a+b} \right) \text{ hours}$$

$$\text{Also } \left( \frac{V}{a} \right) \times \left( \frac{ab}{a+b} \right) = \frac{3}{5} V$$

$$\Rightarrow \frac{b}{a+b} = \frac{3}{5} \quad \dots(i)$$

$$\Rightarrow b = 1.5a$$

When pipe A is used to fill the tank and pipe B is simultaneously, used to empty it, then the time taken to empty the tank is. given by:

$$\frac{V}{\frac{V}{b} - \frac{V}{a}} = \left( \frac{ab}{a-b} \right) < 0$$

$\Rightarrow$  The tank can't get empty when pipe A is used to fill it and pipe B is used to empty it, simultaneously.

173. a Cheese per player =  $\frac{R}{N}$  Kg.

On Monday cheese remaining =  $\left( R - \frac{RM}{N} \right)$  Kg.

On Tuesday cheese required

$$= R - \left( R - \frac{RM}{N} \right) = \frac{RM}{N} \text{ Kg.}$$

174. a Let fraction =  $f = \frac{N}{D}$

$$\frac{N+7}{D} = 2 \quad \dots (i)$$

$$\text{and } \frac{N}{D-2} = 1 \quad \dots (ii)$$

with (i) and (ii)  $N = 3$ .

175. b Number of books = b  
 Number of copies per book = n  
 Resource = total number of pages available to make the photocopies,  
 As per the questions.  
 Resource =  $n \times b = (n - 25) \times (b + 3) = \text{constant} \dots(i)$   
 The above equation is satisfied by option (b) only as:-  
 $150 = 50 \times 3 = (50 - 25) \times (3 + 3)$   
 $= 25 \times 6$   
 Hence (b) is correct.

176. d Apply  $\left( a + b + \frac{ab}{100} \right)$  formula.

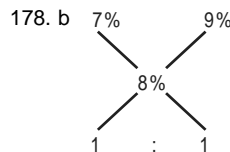
$$20 - 25 - \frac{500}{100} = -10\%$$

177. a Let the total population be x. Then,  
 Eligible Votes = 0.6x  
 Also we can write  
 Eligible female voters = 0.3x  
 Eligible female voters who are educated = 0.1x  
 Now  
 Eligible male voters = 0.3x  
 Male voters who are educated =  $0.6 \times 0.4x - 0.1x$   
 Fraction of male voters who are educated

$$= \frac{0.6 \times 0.45x - 0.1x}{0.3x}$$

$$= \frac{17}{30}$$

So, the answer is option (a)



So A should to invest 35,000 at a rate of 9% interest.

179. c Let the number be ab.

$$a + b = \frac{1}{3}(10a + b)$$

$$7a = 2b$$

$a = 2$  &  $b = 7$  is the only possible combination.

180. a Let us suppose that she worked for n days.

$$3n - (30 - n) \cdot 1 = 50$$

$$4n = 80$$

$$n = 20.$$