

**ENTRANCE EXAMINATION FOR ADMISSION, MAY 2013.**

**M.Sc. (Quantitative Finance)**

**COURSE CODE : 314**

Register Number :

*Signature of the Invigilator  
(with date)*

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**COURSE CODE : 314**

**Time : 2 Hours**

**Max : 400 Marks**

***Instructions to Candidates :***

1. Write your Register Number within the box provided on the top of this page and fill in the page 1 of the answer sheet using pen.
2. Do not write your name anywhere in this booklet or answer sheet. Violation of this entails disqualification.
3. Read each question carefully and shade the relevant answer (A) or (B) or (C) or (D) in the relevant box of the ANSWER SHEET using HB pencil.
4. Avoid blind guessing. A wrong answer will fetch you -1 mark and the correct answer will fetch 4 marks.
5. Do not write anything in the question paper. Use the white sheets attached at the end for rough works.
6. Do not open the question paper until the start signal is given.
7. Do not attempt to answer after stop signal is given. Any such attempt will disqualify your candidature.
8. On stop signal, keep the question paper and the answer sheet on your table and wait for the invigilator to collect them.
9. Use of Calculators, Tables, etc. are prohibited.

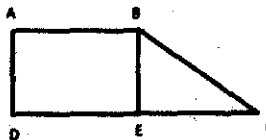
1. If two coins are tossed, what is the probability of getting one Head and or tail?  
 (A) 0                      (B)  $1/4$                       (C)  $1/2$                       (D) 1
  
2. If the ratio of the areas of two squares is 2 :1, then the ratio of the perimeters of the square is  
 (A) 1 : 2                      (B)  $1 : \sqrt{2}$                       (C)  $\sqrt{2} : 1$                       (D) 2 : 1
  
3. There are three types of tickets available for a concert: orchestra, which cost Rs. 12 each; balcony, which cost Rs. 9 each; and box, which cost Rs. 25 each. There were P orchestra tickets, B balcony tickets, and R box tickets sold for the concert. Which of the following expressions gives the percentage of ticket proceeds due to the sale of orchestra tickets?  
 (A)  $100 * P / (P + B + R)$   
 (B)  $12P / (12P + 9B + 25R)$   
 (C)  $100 * 12P / (12P + 9B + 25R)$   
 (D)  $100 * (9B + 25R) / (12P + 9B + 25R)$
  
4. City B is 5 miles east of city A. City C is 10 miles southeast of city B. Which of the following is the closest distance from city A to city C?  
 (A) 11 miles                      (B) 12 miles                      (C) 13 miles                      (D) 14 miles
  
5. If  $3x - 2y = 8$ , then  $4y - 6x$  is  
 (A) -16                      (B) -8                      (C) 8                      (D) 16
  
6. It costs 100 Rs. a kilometer to fly and 120 Rs. a kilometer to drive. If you travel 200 kilometers, flying x kilometers of the distance and driving the rest, then the cost of the trip in rupees is  
 (A) 20000                      (B) 24000                      (C)  $2400-2x$                       (D)  $24000-20x$
  
7. A committee of 3 persons has to be formed from 3 poets and 4 singers. The committee should include at least one poet and at least one singer. In how many ways can the committee be formed?  
 (A) 35                      (B) 30                      (C) 12                      (D) 7
  
8. What is the next number in the series 8, 27, 64, 125, ....  
 (A) 200                      (B) 216                      (C) 250                      (D) 325

9. Which of the following statements can be inferred from the table?

Distribution of Work Hours in a factory

Number of workers	Number of Hours Worked
20	45 – 50
15	40 – 44
25	35 – 39
16	30 – 34
4	0 – 29
<b>TOTAL 80</b>	<b>3100</b>

- I. The average number of hours worked per worker is less than 40.  
 II. At least 3 workers worked more than 48 hours.  
 III. More than half of all the workers worked more than 40 hours.
- (A) I only            (B) II only            (C) I and II only    (D) I and III only
10. When a truck travels at 6 miles per hour, it uses 30 percent more gasoline to travel any distance than it does when it travels at 50 miles per hour. The truck can travel 20 miles on a gallon of gas if it is travelling at 50 miles per hour. The truck has only 10 gallons of gas and is 160 miles from its destination. It takes 20 minutes for the truck to stop for gas. How long will it take the truck to reach its final destination if it is driven at 60 miles per hour?  
 (A) 160 minutes    (B) 180 minutes    (C) 190 minutes    (D) 192 minutes
11. Company P owns 40 percent of the stock in XYZ Corporation. Company Q owns 15,000 shares. Company R owns all the shares not owned by company P or Q. How many shares of stock does company P own if company R has 25 percent more shares than company P?  
 (A) 45,000            (B) 50,000            (C) 60,000            (D) 75,000
12. How many squares with sides  $\frac{1}{2}$  inch long are needed to cover a rectangle that is 4 feet long and 6 feet wide?  
 (A) 25                    (B) 96                    (C) 3,456                (D) 13,824
13. In a group of people solicited by a charity, 30 percent contributed Rs. 40 each, 45 percent contributed Rs. 20 each, and the rest contributed Rs. 12 each. What percentage of the total contributed came from people who gave Rs. 40?  
 (A) 50%                (B) 30%                (C) 40%                (D) 45%
14. A trapezoid ABCD is formed by adding the isosceles right triangle BCE with base 5 inches to the rectangle ABED, where DE is  $t$  inches. What is the area of the trapezoid?



- (A)  $5t + 12.5$             (B)  $5t + 25$             (C)  $2.5t + 12.5$             (D)  $(t+5) 2$

15. A manufacturer of jam wants to make a profit of Rs. 75 when it sells 300 jars of jam. It costs 65 paise each to make the first 100 jars of jam and 55 paise each to make each jar after the first 100. What price should it charge for the 300 jars of jam?
- (A) Rs. 75                      (B) Rs. 250                      (C) Rs. 225                      (D) Rs. 240
16. A car travelled 75 percent of the distance from town A to town B by travelling for T hours at an average speed of V miles per hour. The car traveled at an average speed of S miles per hour for the remaining part of the trip. Which of the following expressions represents the time the car traveled at S miles per hour?
- (A)  $VT/S$                       (B)  $VS/4T$                       (C)  $VT/3S$                       (D)  $3S/VT$
17. Thirty six identical chairs must be arranged in rows with equal number of chairs in each row. Each row must contain at least 3 chairs, and there must be at least 3 rows. A row is parallel to the front of the room. How many different arrangements are possible?
- (A) 2                              (B) 4                              (C) 5                              (D) 6

Directions: [18 - 22] Read the passage carefully and answer the questions by choosing the correct option out of a group of options provided.

Perhaps four thousand years ago, the Aryans began to make their way from the north – west through the mountain passes into the Indus Valley. Tribe after tribe of them came, and the invasion went on for hundreds of years. With their war chariots, their iron-tipped spears and their fierce bowmen, they attacked the villages and towns of the Dravidians. There were often fierce fighting before the Aryans were victorious. They first conquered the land of the Punjab and later the Ganges valley and the whole of Hindustan, that is, all India known as the north of the Narmada river. They made slaves of many of the people that they captured. The process of the division of people into castes thus started in India. Even today we find a lot of castes existing in this region. However, the process of making slaves of the people no more exists in this sub-continent.

18. Aryans invaded Indus valley through:
- (A) The passes in north                      (B) The passes in west  
(C) The passes in north-west                      (D) The passes in Himalaya
19. The invasion took place:
- (A) Suddenly                              (B) Intermittently  
(C) For quite a long period                      (D) At a stretch of hundred years

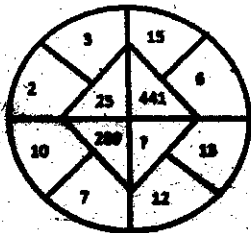
20. Punjab is located at  
 (A) The Ganges Valley  
 (B) The south of Narmada river  
 (C) The north of Narmada river  
 (D) The north of western part of Indus valley
21. The division into castes was started by  
 (A) Aryan (B) Portugese (C) Dravidians (D) British
22. The Aryan first invaded in the land of :  
 (A) Sindh (B) Punjab (C) South India (D) East India

Directions: [ 23 – 27 ] Complete the following series questions by supplying the right letter at ? out of given options :

23. AGLPS?  
 (A) X (B) Y (C) W (D) U
24. EGJLOQ?  
 (A) S (B) R (C) U (D) T
25. IMQUYC?  
 (A) B (B) D (C) F (D) G
26. XUSPNKI?  
 (A) J (B) K (C) M (D) F
27. TQNKH?  
 (A) I (B) J (C) S (D) E

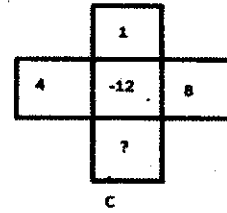
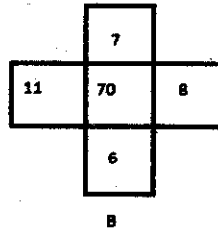
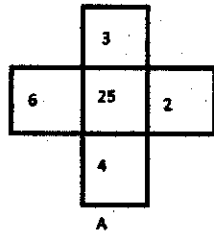
Directions: [ 28 – 37 ] Provide the missing numbers from the given alternatives

28.



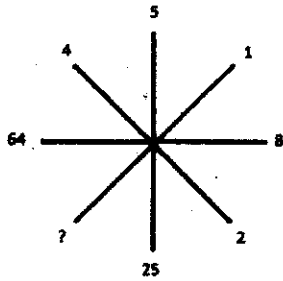
- (A) 625 (B) 25 (C) 125 (D) 156

29.



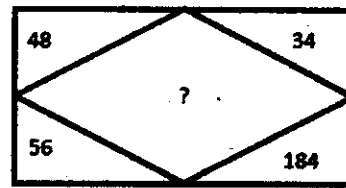
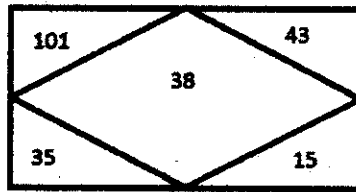
- (A) 10                      (B) 6                      (C) 2                      (D) 1

30.



- (A) 1                      (B) 2                      (C) 3                      (D) 4

31.



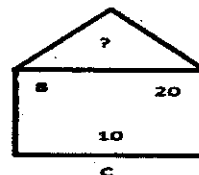
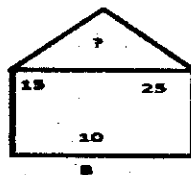
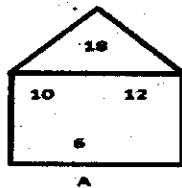
- (A) 127                      (B) 142                      (C) 158                      (D) 198

32.

12	(47)	21
10	(52)	4
64	(?)	24

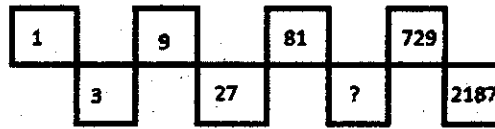
- (A) 16                      (B) 40                      (C) 62                      (D) 83

33.



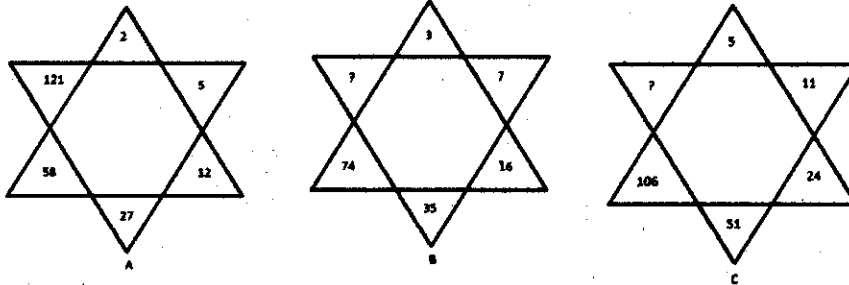
- (A) 30, 18                      (B) 18, 30                      (C) 81, 30                      (D) 30, 81

34.



- (A) 223                      (B) 243                      (C) 263                      (D) 323

35.



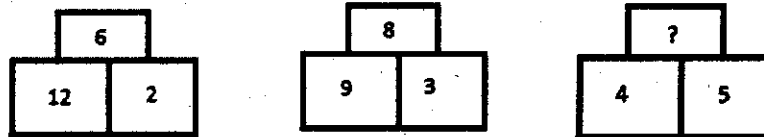
- (A) 217, 113                      (B) 712, 153                      (C) 351, 217                      (D) 153, 217

36.

7	9	8	2	48
7	8	9	?	72

- (A) 4                      (B) 16                      (C) 3                      (D) 24

37.

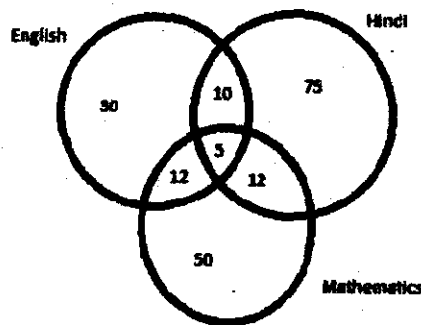


- (A) 11                      (B) 12                      (C) 13                      (D) 14

Directions: [ 38 – 41 ] Observe the codes given carefully and applying the principle give the codes to the question terms

38. If MINJUR is coded as 312547 and TADA as 6898, how can MADURAI be coded in the same pattern?  
 (A) 3498178                      (B) 3894871                      (C) 3849781                      (D) 3894781
39. PALAM is given code number 48, what will SANTACRUZ be numbered as?  
 (A) 75                      (B) 85                      (C) 120                      (D) 123
40. If Z = 52, ACT = 48, then BAT will be?  
 (A) 39                      (B) 41                      (C) 44                      (D) 46

41. If REASON is coded as 5 and BELIEVED as 7 what should be the code number for GOVERNMENT?  
 (A) 6 (B) 8 (C) 9 (D) 10
42. Pointing to a person, a man said to a woman, "His mother is the only daughter of your father." How was the woman related to the person?  
 (A) Sister (B) Mother (C) Wife (D) Aunt
43. Pointing to a man Prem said, " His son is my son's uncle". How is the man related to Prem?  
 (A) Brother (B) Uncle (C) Father (D) Grandson
44. A man said to a woman, "Your mother's husband's sister is my aunt." How is the woman related to the man?  
 (A) Grand Daughter (B) Daughter  
 (C) Sister (D) Aunt
45. There are two men aged 26 and 30 years. The probability to live 35 years more is 0.67 for 26 year old man and 0.60 for 30 year old man. The probability that at least one of these men will be alive 35 years hence is  
 (A) 0.44 (B) 0.6976 (C) 0.868 (D) 0.866
46. In a certain school, 20% students failed in English, 15% students failed in Mathematics and 10% students failed in both English and Mathematics. A student is selected at random. If he failed in English, what is the probability that he also failed in Mathematics?  
 (A)  $1/4$  (B)  $3/4$  (C)  $1/2$  (D)  $3/8$
47. Some friends who went on a picnic decided to spend Rs. 96 on eatables. 4 of them did not turn up, so the remaining ones had to contribute Rs. 4 each extra. The number of friends who attend picnic was:  
 (A) 8 (B) 12 (C) 16 (D) 24
48. 500 candidates appeared in an examination of English, Hindi and Mathematics. The diagram below gives the number of candidates who failed in different subjects. What is the percentage of candidates who failed in at least two subjects?



- (A) 0.78 (B) 1.0 (C) 6.8 (D) 7.8



49. In a group of persons travelling in a bus, 6 persons can speak Tamil, 15 can speak Hindi and 6 can speak Gujarati. In that group none can speak any other language. If 2 persons in the group can speak 2 languages, then how many persons are there in the group?

(A) 21                      (B) 22                      (C) 23                      (D) 24

Directions [50 – 54]: Study the following table carefully and answer the questions that follow:-

No of Cycles in 5 different types manufactured by a company over the years (in thousands)

**TYPES OF CYCLES**

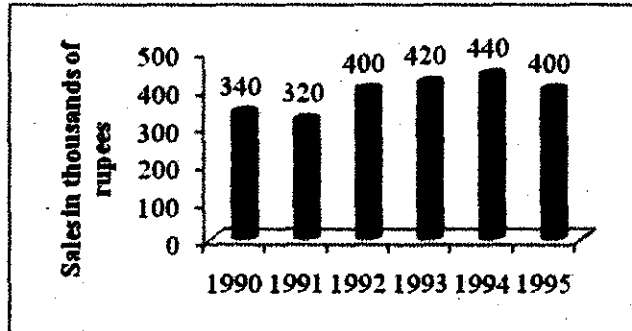
Year	A	B	C	D	E
1997	200	150	78	90	65
1998	150	180	100	105	70
1999	180	175	92	110	85
2000	195	160	120	125	75
2001	220	185	130	135	80

50. What was the percentage increase in production of D type cycles from 1998 – 2000?  
(A) 10                      (B) 19                      (C) 5                      (D) 25
51. In the case of which type of cycles was the total production of the given 5 years the maximum?  
(A) C                      (B) B                      (C) A                      (D) D
52. What was the percentage drop in production of A type cycles from 1997 – 1999?  
(A) 30                      (B) 10                      (C) 25                      (D) 50
53. In the case of which type of cycles was there a continuous increase in production over the years?  
(A) B                      (B) A                      (C) C                      (D) D

54. The production of E type of cycles in 2001 was what percent of production of B type in 2000?

- (A) 80                      (B) 20                      (C) 50                      (D) 200

Directions (55 - 59): The following questions are to be answered on the basis of the sales turnover bar chart for the year 1990 to 1995 given below:



55. By what amount are the sales in 1993 more than those in 1991?

- (A) Rs. One hundred                      (B) Rs. Ten thousand  
(C) Rs. One lakh                      (D) Rs. Ten lakh

56. The sales in 1991 are how many times to those of 1992?

- (A) 8 times                      (B) 0.8 times                      (C) 2.5 times                      (D) 3 times

57. In which year did the sales show the least percent increase compared to the preceding year?

- (A) 1990                      (B) 1992                      (C) 1993                      (D) 1994

58. The sales in 1994 are what percent of those in 1992?

- (A) 40                      (B) 4                      (C) 110                      (D) 1.1

59. What is the appropriate average sales (in thousands) for the years 1992 to 1995?

- (A) 420                      (B) 415                      (C) 430                      (D) 425

60. Data processing cycle consists of:

- (A) Receiving terminal reconverts the codes into images and prints a "facsimile" of the original page  
(B) Terminals which can scan a paper form and converts its image into analog code for transmission  
(C) Three basic steps – input cycle, processing cycle and output cycle  
(D) All the above

61. If  $\alpha$  and  $\beta$  are then roots of the equation  $x^2 - 7x + 12 = 10$ , then what is the value of  $\alpha^2 + \beta^2$
- (A) 19                      (B) 5                      (C) 25                      (D) 38
62. The amount of the cheque is recorded in magnetic ink by an
- (A) Embosser              (B) Encoder              (C) Imprinter              (D) Inscriber
63. The convergence of technology of computer, telephone and T.V into a single systems is known as
- (A) Copper                      (B) Router  
(C) Information super highway              (D) Wi-Fi
64. Videoconferencing is a meeting between two or more geographically separated individuals who
- (A) Use a satellite to transmit audio and video data  
(B) Use a network or the internet to transmit audio and video data  
(C) Both (A) and (B)  
(D) None of the above
65. 1 KB (kilobyte) and 1 MB (megabyte) are respectively equal to :
- (A) 1000 bytes and 10000 bytes              (B) 1024 bytes and 100 kilobytes  
(C) 1024 bytes and 1000 kilobytes              (D) 1000 bytes and 100 kilobytes
66. Algorithm is
- (A) A set of circuit helps in connecting the computer network  
(B) A set of ordered steps or procedures needed to solve a specific problem  
(C) (A) or (B)  
(D) None of the above
67. Management information system:
- (A) Automate routine office tasks  
(B) Produce reports for different types of managers  
(C) Both (A) and (B)  
(D) None of the above

68. Decision support systems:
- (A) Are used to assist managers in making mission critical decisions
  - (B) Produce highly detailed, customized reports based on the information in an organisation's transaction processing system and based on information from other sources
  - (C) Both (A) and (B)
  - (D) None of the above
69. Power point:
- (A) Allows you to give animation effect to each object introduced in the slide
  - (B) Allows you to insert sound, music, video clips on a slide
  - (C) Has tools with which you can use drawing tools to add these objects on a slide
  - (D) All the above
70. Commerce includes
- (A) Selling and buying of goods only
  - (B) Business and Industry
  - (C) Only business and not Industry
  - (D) Selling and Buying and all those activities which facilitate trade
71. Business means
- (A) Commerce
  - (B) Industry and Commerce
  - (C) Trade and Commerce
  - (D) Selling and Buying of goods
72. "Fishing" should be classified as
- (A) Extractive Industry
  - (B) Genetic Industry
  - (C) Manufacturing Industry
  - (D) Construction Industry
73. The oldest form of business organisation is
- (A) Partnership
  - (B) Sole proprietorship
  - (C) Joint stock company
  - (D) Co-operative undertaking
74. In which of the following forms of business organisation, registration is legally compulsory?
- (A) Sole proprietorship
  - (B) Partnership
  - (C) Joint stock company
  - (D) Co-operative undertaking

75. RAM means  
 (A) Random Access Memory (B) Read Access Memory  
 (C) Right Access Memory (D) Read Ability Memory
76. Capital gearing means  
 (A) Proper capitalisation  
 (B) Watered capital  
 (C) Fixation of a proper ratio between two or more types of securities  
 (D) Trading on equity
77. Working capital should not be used for  
 (A) Payment of salaries (B) Redemption of debentures  
 (C) Payment to creditors (D) Purchase of raw materials
78. Investment in which of the following is most risky?  
 (A) Equity shares (B) Preference shares  
 (C) Debentures (D) Fixed deposits
79. A polygon with 6 sides is called  
 (A) Decagon (B) Pentagon (C) Hexagon (D) octagon
80. Ploughing back of profits means  
 (A) Earning of black money  
 (B) Dividends not claimed by shareholders  
 (C) Retaining the earnings  
 (D) Not paying dividends in a particular year
81. Bank overdraft is a good source of finance for  
 (A) Short term (B) Medium term  
 (C) Long term (D) Any of the above
82. The most important economic function of stock exchange is to  
 (A) Safeguard the interest of investors  
 (B) Help in the capital formation in the country  
 (C) Provide facilities for speculation  
 (D) Provide a ready market for old securities

83. Speculation in stock exchange means
- (A) Investment in securities
  - (B) Gambling in securities
  - (C) Buying and selling securities in the hope of making profit due to changes in prices
  - (D) None of the above
84. Dealings in stock exchanges in India are regulated by
- (A) Indian Companies Act
  - (B) Securities Contracts (Regulation) Act
  - (C) Stock Exchanges Act
  - (D) None of the above
85. When a right to purchase securities is acquired it is known as
- (A) Call option
  - (B) Put option
  - (C) Double option
  - (D) None of the above
86. Blue chips mean
- (A) Shares guaranteed by the government
  - (B) Shares listed in the stock exchange
  - (C) Shares yielding consistent high rate of return
  - (D) None of the above
87. Purchase and sale of shares before or after official trading hours of stock exchange is known
- (A) Hammering
  - (B) Kerb trading
  - (C) Short selling or short buying
  - (D) Margin trading
88. Shares and debentures of blue chip companies are
- (A) Money market instruments
  - (B) Capital market instruments
  - (C) Gilt - edged securities
  - (D) Any of these depending on certain factors

89. Which one of the following does NOT constitute the purpose of setting up of SEBI?
- (A) To protect the interest of the investors in securities
  - (B) To promote the development of the securities market
  - (C) To regulate the global securities markets
  - (D) To deal with matters connected with fraudulent and unfair trade practices relating to securities market
90. Net Asset Value (NAV) of units of a Mutual Fund means
- (A) Total of the market value of all investments
  - (B) Total of the market value of all investment plus income accrued
  - (C) Net assets divided by the number of outstanding units
  - (D) Net profit on a per unit basis
91. The largest Mutual Fund business in India is in the hand of
- (A) Unit Trust of India
  - (B) State Bank of India
  - (C) Industrial Development Bank of Indian
  - (D) Tata Mutual Funds
92. The main purpose of a Mutual Fund is to provide diversified investment opportunities to
- (A) Small investors
  - (B) Larger investors
  - (C) Joint stock companies
  - (D) Public Sector Undertakings
93. www means
- (A) world web width
  - (B) world wide web
  - (C) weather width web
  - (D) whole world web
94. When cotton ginning, cotton spinning and cotton weaving mills combine, it is known as
- (A) Horizontal combination
  - (B) Vertical combination
  - (C) Lateral combination
  - (D) Diagonal combination

95. Chamber of Commerce is a form of
- (A) Association (B) Federation  
(C) Partial consolidation (D) Complete Consolidation
96. Cartel is a form of
- (A) Trade association (B) Federation  
(C) Partial consolidation (D) Complete consolidation
97. Surrender value of a life policy is the amount payable by Life Insurance Corporation when
- (A) The life policy matures by death  
(B) The life policy matures after the expiry of the policy period  
(C) The life policy is withdrawn before its maturity  
(D) The payment of premiums is discontinued and the amount is payable at the maturity of the policy
98. In endowment life policy, the amount is payable
- (A) At the time of the death of policy holder  
(B) At the end of the period specified in the policy  
(C) On the death of the policy holder or on the expiry of the policy, whichever is earlier  
(D) On the death of the policy holder or on the expiry of the policy, whichever is later
99. A plan when expressed in quantitative terms is known as
- (A) Policy (B) Procedure (C) Objective (D) Budget
100. Decentralisation
- (A) Increases the importance of superiors  
(B) Decreases the importance of superiors  
(C) Increases the importance of subordinates  
(D) Decreases the importance of subordinates