

Q-41

HALL TICKET NO:

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M.B.A (Business Analytics)

Entrance Examination – 2018

(75 Marks)

INSTRUCTIONS

1. *Write your Hall Ticket Number in the OMR Answer sheet given to you. Also write the Hall Ticket Number in the space provided above.*
2. *The question paper booklet consists of 75 questions. Each question carries one (1) mark.*
3. *There is negative marking. Each wrong answer carries – 0.33 marks.*
4. *Answers are to be marked on the OMR answer sheet following the instructions provided there upon.*
5. *Hand over OMR answer sheet to the invigilator before leaving the examination hall.*
6. *No additional sheets will be provided. Rough work can be done in the question paper itself or in the space provided at the end of the booklet.*
7. *Calculators, mobile phones and electronic gadgets are not allowed.*

Direction for questions 1 to 5: Each question consist of two words which have a certain relationship to each other followed by four pairs of related words, Select the pair which has the same relationship.

1. ARMY:LOGISTICS

- A. Business : Strategy
- B. Soldier : Students
- C. War : Logic
- D. Team : Individual

2. MODESTY: ARROGANCE

- A. Passion: Emotion
- B. Practice: Perfection
- C. Cause: Purpose
- D. Debility: Strength

3. MARGIN : PAGE

- A. Step : Ladder
- B. Stalk : Plant
- C. Water : Bowl
- D. Outskirts : Town

4. SHIP : LOG

- A. Individual: Diary
- B. Inventory : Emporium
- C. Catalog : Team
- D. Bulletin : Incident

5. RELUCTANT:KEEN

- A. Squeeze: Lemon
- B. Remarkable: Usual
- C. Happy: Joyful
- D. Angry: Irritating

6. Income is related to profit in the same way as expenditure is related to _____

- A. Balance
- B. Loss
- C. Sales
- D. Surplus

7. n is a whole number which when divided by 4 gives 3 as remainder. What will be the remainder when $2n$ is divided by 4?
- A. 3
 - B. 2
 - C. 1
 - D. 0
8. A man completes a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.
- A. 220 km
 - B. 224 km
 - C. 230 km
 - D. 234 km
9. Present ages of Rohit and Mahesh are in the ratio of 5: 4 respectively. Three years hence, the ratio of their ages will become 11: 9 respectively. What is Mahesh's present age in years?
- A. 24
 - B. 28
 - C. 32
 - D. 36
10. On selling 17 balls at Rs. 720, there is a loss equal to the cost price of 5 balls. The cost price of a ball is:
- A. Rs.45
 - B. Rs.50
 - C. Rs.55
 - D. Rs.60
11. Two numbers A and B are such that the sum of 5% of A and 4% of B is two-third of the sum of 6% of A and 8% of B. Find the ratio of A and B.
- A. 2 : 3
 - B. 1 : 1
 - C. 3 : 4
 - D. 4 : 3
12. A man bought goods worth Rs. 6000 and sold half of them at a gain of 10%. At what gain percent must he sell the remainder so as to get a gain of 25% on the whole?
- A. 25%
 - B. 30%
 - C. 35%
 - D. 40%
13. The difference between two positive integers is 3. If the sum of their squares is 369, then the sum of the numbers is:
- A. 25
 - B. 27
 - C. 33
 - D. 81

14. A, B and C start at the same time in the same direction to run around a circular stadium. A completes a round in 252 seconds, B in 308 seconds and C in 198 seconds, all starting at the same point. After what time will they again at the starting point?
- A. 26 minutes and 18 seconds
 - B. 42 minutes and 36 seconds
 - C. 45 minutes
 - D. 46 minutes and 12 seconds
15. At 3:40, the hour hand and the minute hand of a clock form an angle of:
- A. 120°
 - B. 125°
 - C. 130°
 - D. 135°

Direction for questions 16 to 20: look carefully for the pattern and complete the series.

16. 165, 195, 255, 285, 345, ?
- A. 375
 - B. 420
 - C. 435
 - D. 390
17. 7, 26, 63, 124, 215, 342, ?
- A. 481
 - B. 511
 - C. 391
 - D. 421
18. ELFA, GLHA, ILJA, ?, MLNA
- A. OLPA
 - B. KLMA
 - C. LLMA
 - D. KLLA
19. ZA5, Y4B, XC6, W3D, ?
- A. E7V
 - B. V2E
 - C. VE5
 - D. VE7
20. QPO, NML, KJI, ?, EDC
- A. HGF
 - B. CAB
 - C. JKL
 - D. GHI

21. Pointing to a photograph, a woman says, "This man's son's sister is my mother-in-law." How is the woman's husband related to the man in the photograph?
- A. Grandson
 - B. Son
 - C. Son in law
 - D. Cousin
22. A fruit basket contains more apples than lemons. There are more lemons in the basket than there are oranges. The basket contains more apples than oranges. If the first two statements are true, the third statement is
- A. True
 - B. False
 - C. Uncertain
 - D. Data inadequate

Direction for questions 23 to 26: In the following questions choose the word which is the exact OPPOSITE of the given words.

23. Complaisance

- A. Churlishness
- B. Emptiness
- C. Difficulty
- D. Swiftiness

24. Sacrosanct

- A. Irreligious
- B. Unethical
- C. Irreverent
- D. Unholy

25. Industrious

- A. Indifferent
- B. Indolent
- C. Casual
- D. Passive

26. Accelerate

- A. Swerve
- B. Arouse
- C. Retard
- D. Dispel

27. If standard deviation of population 1 is 3 with sample size is 8 and population 2 standard deviation is 5 with sample size is 7, then standard deviation of sampling distribution is

- A. 4.044
- B. 3.044
- C. 1.044
- D. 2.044

28. Conditional probability of two events Y and Z written as $P(Z|Y) = P(Y \text{ and } Z)/P(A)$ shows that events are
- A. statistically dependent events
 - B. descriptive unaffected events
 - C. statistically independent events
 - D. statistically unaffected events
29. Difference of mode and mean is equal to
- A. 3(mean-median)
 - B. 2(mean-median)
 - C. 3(mean-mode)
 - D. 2(mode-mean)
30. Probability which explains x is equal to or less than a particular value is classified as
- A. discrete probability
 - B. cumulative probability
 - C. marginal probability
 - D. continuous probability
31. First quartile of data set is 12, third quartile of data set is 18 and median is 9 then absolute skewness of same data set is
- A. 18
 - B. 12
 - C. 9
 - D. 15
32. Number of employees according to human resource manager is an example of
- A. flowchart variable
 - B. discrete variable
 - C. continuous variable
 - D. measuring variable
33. If each observation of a set is multiplied by 10, the mean of the new set of observations _____.
- A. remains the same.
 - B. is 10 times the original mean.
 - C. is one-tenth the original mean.
 - D. is increased by 10.

34. In a case of positive skewed distribution the relation between mean, median and mode that hold is _____

- A. Median $>$ mean $>$ mode.
- B. Mean $>$ median $>$ mode.
- C. Mean = median = mode.
- D. Mean $<$ median $<$ mode.

35. In a grouped frequency distribution, the intervals should be

- A. Mutually exclusive
- B. Exhaustive
- C. Both A and B
- D. Neither A nor B

36. Approximately what percentage of scores fall within one standard deviation of the mean in a normal distribution?

- A. 50%
- B. 95%
- C. 99%
- D. 68%

37. Which of the following statements is correct?

- A. An extremely small p-value indicates that the actual data is different significantly from the expected if the null hypothesis is true
- B. The p-value measures the probability that the hypothesis is true
- C. The p-value measures the probability of making a Type II error
- D. The larger the p-value, the stronger the evidence against the null hypothesis

38. In statistical testing of hypothesis, what happens to the region of rejection when the level of significance α is reduced?

- A. The answer depends on the value of β
- B. The rejection region is reduced in size
- C. The rejection region is increased in size
- D. The rejection region is unaltered

39. What type of error occurs if you fail to reject H_0 when, in fact, it is not true?

- A. Type II
- B. Type I
- C. either Type I or Type II, depending on the level of significance
- D. either Type I or Type II, depending on whether the test is one tail or two tail

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40. The average manufacturing work week in a metropolitan city was 40 hours last year. It is believed that the recession has led to a reduction in the average work week. To test the validity of this belief, the alternative hypothesis is
- A. $H_1=40$
 - B. $H_1<40$
 - C. $H_1>40$
 - D. $H_1 \geq 40$
41. The correlation coefficient for two real-valued attributes is 0.85. What does this value tell you?
- A. The attributes are not linearly related.
 - B. As the value of one attribute increases the value of the second attribute also increases.
 - C. As the value of one attribute decreases the value of the second attribute increases.
 - D. The attributes show a curvilinear relationship.
42. Any statement whose validity is tested on the basis of a sample is called:
- A. Null hypothesis
 - B. Alternative hypothesis
 - C. Statistical hypothesis
 - D. Simple hypothesis
43. If the null hypothesis was rejected and there was 1 chance out of 100 that the decision was wrong, what was the alpha level in the study?
- A. 0.01
 - B. 0.10
 - C. 0.001
 - D. 1.00
44. The correlation coefficient is the _____ of two regression coefficients:
- A. Geometric Mean
 - B. Arithmetic Mean
 - C. Harmonic Mean
 - D. Mean

45. The coefficient of determination tells us

- A. The proportion of variance in Y accounted for by X.
- B. The proportion of variance in X accounted for by Y.
- C. Mean Value of Y
- D. Mean value of X

46. When variations in the values of two variables have a constant ratio, there will be

- A. Linear Correlation
- B. Non-Linear Correlation
- C. Zero Correlation
- D. None of the above

Directions for questions 47 to 51: From The given words, choose a word which means almost the same as given below.

47. REPERCUSSION

- A. Clever reply
- B. Recollection
- C. Remuneration
- D. Reaction

48. SCINTILLATING

- A. Smouldering
- B. Glittering
- C. Touching
- D. Warming

49. INEXPLICABLE

- A. Confusing
- B. Unaccountable
- C. Chaotic
- D. Unconnected

50. AUGMENT

- A. Harvest
- B. Slack
- C. Reach
- D. Increase

51. IRK

- A. Irritate
- B. Devour
- C. Shrug
- D. Submissive

52. In how many of the distinct permutations of the letters in the word 'MISSISSIPPI' do the 4 I's not come together?

- A. 39916800
- B. 34650
- C. 33810
- D. 840

53. Find the area below $f(x) = -x^2 + 4x + 3$ and above $g(x) = -x^3 + 7x^2 - 10x + 5$ over the interval $1 \leq x \leq 2$:

- A. 23
- B. $49/12$
- C. $56/3$
- D. $62/3$

54. The minimum value of $3 \cos x + 4 \sin x + 8$ is:

- A. 5
- B. 9
- C. 7
- D. 3

55. The angle between the lines represented by the equations $2y - \sqrt{12}x - 9 = 0$ and $\sqrt{3}y - x + 7 = 0$, is:

- A. $22\frac{1}{2}^\circ$
- B. 30°
- C. 45°
- D. 60°

56. If, in two circles, arcs of the same length subtend angles of 60° and 75° at the centre, find the ratio of their radii:

- A. 4:5
- B. 5:4
- C. 5:5
- D. 4:4

57. If a and b belong to the set $\{1,2,3,4\}$ then number of equations of $ax^2+bx+1=0$ having real solutions is:
- A. 6
B. 7
C. 10
D. 12
58. The internal bisector of an angle A in a triangle ABC meets the side BC at point D . If $AB = 4$, $AC = 3$ and angle $A = 60^\circ$ then what is the length of the bisector AD ?
- A. $12\sqrt{(3/7)}$
B. $12\sqrt{(13/7)}$
C. $4\sqrt{(13/7)}$
D. $4\sqrt{(3/7)}$
59. If the means of two sequences $6, 7, x, 8, y, 14$ and $6, 7, x, 8, 14$ are respectively 9 and 10 . What are the values of x and y ?
- A. $19, 4$
B. $15, 19$
C. $4, 15$
D. $15, 4$
60. The solution of the initial value problem (IVP): $\sin(x)dx + ydy = 0$, $y(0) = 1$ is:
- A. $y = \sqrt{(2\cos x - 1)}$
B. $y = \sqrt{(1 - 2\cos x)}$
C. $y = \sqrt{(2\sin x - 1)}$
D. $y = \sqrt{(1 - 2\sin x)}$
61. If $3\frac{1}{4} + 2\frac{1}{2} - 1\frac{5}{6} = \frac{x^2}{10} + 1\frac{5}{12}$ then what is " $x-5$ "
- A. $\sqrt{5}$
B. 5
C. 0
D. 25
62. The number of roots of $A^2/x + B^2/(x+1) = 1$ is:
- A. 1
B. 2
C. 3
D. can't be determined

63. The value of $\log(0.0001)$ with base 0.001 is
- 1/5
 - 2/3
 - 4/3
 - 3/2
64. Let $y = \sqrt{a + \sqrt{a + \sqrt{a + \dots - \infty}}}$, $y, a > 0$; then:
- $y = [1 \pm \sqrt{1 + 4a}] / 2$
 - $y = [1 \pm \sqrt{1 - 4a}] / 2$
 - $y = [1 + \sqrt{1 + 4a}] / 2$
 - no real solution existing
65. If $O(A) = 15$, $O(B) = 25$, $O(A \cap B) = 5$, then what is the value of $O(A^c \cap B)$ is:
- 5
 - 10
 - 15
 - 20
66. What is the value of $\int_0^1 x^3 (1 - x^4)^2 dx$?
- 0
 - 1
 - 1/12
 - 12
67. Consider a line passing through (1, 2) and (4, 8), gradient of this line is equal to
- 1/2
 - 1/2
 - 2
 - 2
68. Value of $b^2 - 4ac$ determines nature of roots, for real and different roots, $b^2 - 4ac$ is
- lesser than 0
 - equal to 0
 - greater than 0
 - None of above

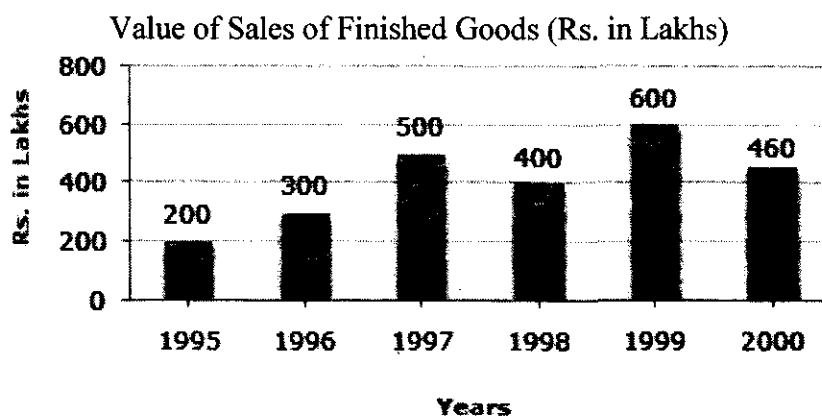
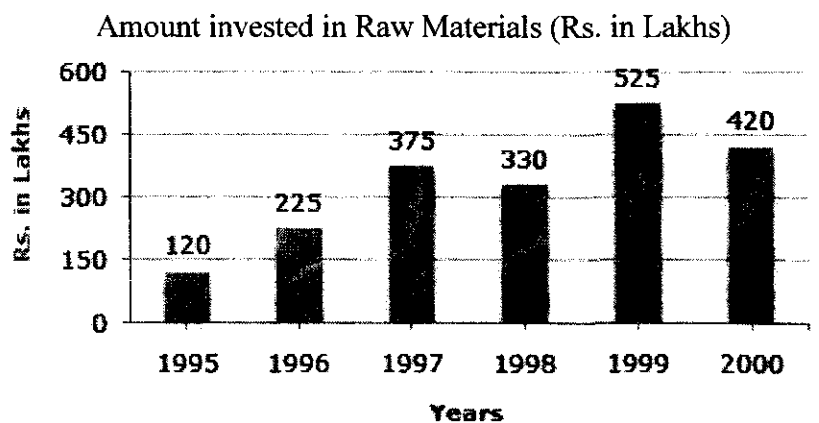
69. In following number sequence 40960, 10240, 2560, 640, next three numbers in sequence are

- A. 300, 150, 50
- B. 200, 90, 10
- C. 160, 40, 10
- D. 180, 60, 20

70. If monthly pay of salesman is 'y' and includes basic pay \$200 plus a commission of \$5 for every unit he sales then function for this can be written as

- A. $x = 205 + 5y$
- B. $200 + 5xy$
- C. $y = 200 + 5x$
- D. $y = 205 + x$

For questions 71 to 75, study the following graphs and answer the questions. Out of the two bar graphs provided below, one shows the amounts (in Lakh Rs.) invested by a Company in purchasing raw materials over the years and the other shows the values (in Lakh Rs.) of finished goods sold by the Company over the years.



71. The maximum difference between the amount invested in Raw materials and value of sales of finished goods was during the year?

- A. 1995
- B. 1996
- C. 1997
- D. 1998

72. The value of sales of finished goods in 1999 was approximately what percent of the sum of amount invested in Raw materials in the years 1997, 1998 and 1999?

- A. 33%
- B. 37%
- C. 45%
- D. 49%

73. What was the difference between the average amount invested in Raw materials during the given period and the average value of sales of finished goods during this period?

- A. Rs. 62.5 lakhs
- B. Rs. 68.5 lakhs
- C. Rs. 71.5 lakhs
- D. Rs. 77.5 lakhs

74. In which year, the percentage change (compared to the previous year) in the investment on Raw materials is same as that in the value of sales of finished goods?

- A. 1996
- B. 1997
- C. 1998
- D. 1999

75. In which year, there has been a maximum percentage increase in the amount invested in Raw materials as compared to the previous year?

- A. 1996
- B. 1997
- C. 1998
- D. 1999
