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**GRD School of Commerce and International Business**  
**I B Com (PA) (2017-2020)**

**Semester I**

**Allied : Mathematics For Business - 118D**

**Multiple Choice Question**

1. The matrix is an arrangement of numbers in\_\_\_\_\_

- a. m rows & n columns
- b. n rows & m columns
- c. both a & b
- d. none of the above.

Answer: A

2. The value of the determinant  $\begin{bmatrix} 5 & -2 & 3 \\ 4 & -1 & -5 \\ 6 & 7 & 9 \end{bmatrix}$ ; is \_\_\_\_\_.

- a. 100.
- b. 364.
- c. 14.
- d. 340.

Answer: B

3. Zero matrix is also called\_\_\_\_\_.

- a. Diagonal matrix
- b. Scalar matrix
- c. Unit matrix
- d. Null matrix

Answer: D

4. The rank of the given matrix  $\begin{bmatrix} 1 & 2 & 5 \\ 0 & 0 & 0 \\ 3 & -4 & 9 \end{bmatrix}$  is\_\_\_\_\_

- a. 1
- b. 2
- c. 3
- d. 0

Answer: B

5. The order of  $\begin{bmatrix} 3 & 1 & 3 \\ 6 & 5 & 6 \end{bmatrix}$  is \_\_\_\_\_

- a. 3x3
- b. 2x3
- c. 3x2
- d. 4x4

Answer: B.

6. If A is  $\begin{bmatrix} 3 & 2 & 3 \\ 0 & 4 & 0 \\ 3 & 8 & 3 \end{bmatrix}$  then  $\rho(A)$  is\_\_\_\_\_.

- a. 0
- b. 1
- c. 2
- d. 3

Answer: C

7. The given matrix is  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}$  \_\_\_\_\_

- a. a scalar matrix.
- b. a unit matrix.
- c. a square matrix
- d. a rectangular matrix.

Answer: D

8. If  $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$  then  $2A =$  \_\_\_\_\_

- a.  $\begin{bmatrix} 2 & -4 \\ 3 & 4 \end{bmatrix}$
- b.  $\begin{bmatrix} 7 & -2 \\ 3 & 4 \end{bmatrix}$
- c.  $\begin{bmatrix} 2 & 4 \\ 6 & 8 \end{bmatrix}$
- d.  $\begin{bmatrix} 1 & 7 \\ -2 & 10 \end{bmatrix}$

Answer: C

9. If A is a singular matrix  $|A|$  is \_\_\_\_\_.

- a. 1
- b. 0
- c. any positive value.
- d. any negative value.

Answer: B

10. If  $\begin{bmatrix} -3 & 2 & -5 \\ 4 & 1 & 6 \\ 7 & 8 & 7 \end{bmatrix}$  and  $\begin{bmatrix} 2 & -5 \\ -3 & 2 \end{bmatrix}$  are \_\_\_\_\_.

- a. square matrices.
- b. null matrices.
- c. row matrices.
- d. zero matrices.

Answer: A

11. If A, B are two matrices and K is a scalar then \_\_\_\_\_.

- a.  $K(A+B) \neq KA+KB$
- b.  $K(A+B) = KA+KB$ .
- c.  $K(A+B) < KA+KB$ .
- d.  $K(A+B) > KA+KB$ .

Answer: B

12. If A, B and C are matrices the associative property is \_\_\_\_\_.

- a.  $(AB)C < A(BC)$ .
- b.  $(AB)C > A(BC)$ .
- c.  $(AB)C \neq A(BC)$ .

d.  $(AB)C=A(BC)$ .

Answer: D

13. Zero matrix is otherwise known as\_\_\_\_\_.

a.null matrix.

b.square matrix.

c.unit matrix.

d.triangular matrix.

Answer: A

14. If A and B are matrices of same order then \_\_\_\_\_.

a.  $A+B=B+A$ .

b.  $A+B \neq B+A$ .

c.  $A+B < B+A$ .

d.  $A+B > B+A$ .

Answer: A

15. If A,B and C are matrices of the same order then \_\_\_\_\_.

a.  $(A+B)+C=A+(B+C)$ .

b.  $(A+B)+C \neq A+(B+C)$ .

c.  $(A+B)+C > A+(B+C)$ .

d.  $(A+B)+C < A+(B+C)$ .

Answer: A

16. The determinant value of the following matrix  $\begin{bmatrix} 7 & 1 \\ 2 & 7 \end{bmatrix}$  is\_\_\_\_\_

a.47

b.40

c.57

d.-57

Answer: A

17. When the number of rows and the number of columns of a matrix are equal, the matrix is\_\_\_\_\_.

a.square matrix .

b.row matrix.

c.column matrix.

d.none of these.

Answer: A

18. If all the elements of a matrix are zeros, then the matrix is a\_\_\_\_\_.

a.unit matrix .

b.square matrix.

c.zero matrix.

d.none of these.

Answer: C

19. A diagonal matrix in which all the diagonal elements are equal is a\_\_\_\_\_.
- a.scalar matrix.
  - b.column matrix.
  - c.unit matrix.
  - d.None of these.

Answer: A

20. If any two rows and columns of a determinant are identical, the value of the determinant is\_\_\_\_\_.

- a.1.
- b.0.
- c.-1.
- d.Unaltered.

Answer: B

21. .If there is only one column in a matrix, it is called\_\_\_\_\_.

- a.Row matrix .
- b.column matrix.
- c.square matrix.
- d.rectangular matrix.

Answer: B

- 22.When all the elements of a matrix are zeros, the matrix is called \_\_\_\_\_.

- a.unit matrix.
- b.square matrix.
- c.null matrix.
- d.Row matrix.

Answer: C

- 23.When the number of rows is not equal to the number of columns then the matrix is said to be \_\_\_\_\_.

- a.unit matrix.
- b. Rectangular matrix.
- c .null matrix.
- d.row matrix.

Answer: B

- 24.The Value of determinant of  $\begin{vmatrix} 3 & 6 \\ 4 & -1 \end{vmatrix}$  is\_\_\_\_\_

- a. -27.
- b. 27.
- c. 24.
- d. -24.

Answer: A

25. If the number of rows of a matrix is greater than the number of columns then the matrix is called as \_\_\_\_\_

- a. a row matrix.
- b. a column matrix.
- c. a rectangular matrix.
- d. a square matrix.

Answer: C

26. Inverse of a matrix exists if and only if \_\_\_\_\_.

- a. determinant value exists.
- b. determinant value is zero.
- c. determinant value is one.
- d. determinant value is negative.

Answer: A

27. A square matrix A is an orthogonal matrix x, if \_\_\_\_\_.

- a.  $AA^{-1}=I$  .
- b.  $AA^{-1}=I$ .
- c.  $A=A^{-1}$  .
- d.  $A=A^{-1}$ .

Answer: B

28.  $( 3 \ 8 \ 9 \ -2 )$  is a row matrix of order \_\_\_\_\_.

- a.  $4 \times 4$
- b.  $1 \times 4$
- c.  $1 \times 1$ .
- d.  $4 \times 1$ .

Answer: B

29. If  $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$  then  $3A =$  \_\_\_\_\_

- a.  $\begin{bmatrix} 3 & 6 \\ 9 & 12 \end{bmatrix}$
- b.  $\begin{bmatrix} 2 & 2 \\ 6 & 4 \end{bmatrix}$
- c.  $\begin{bmatrix} 2 & 4 \\ 6 & 8 \end{bmatrix}$
- d.  $\begin{bmatrix} 7 & 10 \\ 15 & 22 \end{bmatrix}$

Answer: A

30. The series 4, 2, 1 .... takes the form of \_\_\_\_\_.

- a. A.P.
- b. H.P.
- c. G.P.
- d. A.M

Answer: C

31. The series 90, 80, 70 \_\_\_\_\_.

- a.A.P.
- b.H.P.
- c.G.P.
- d.A.M.

Answer: A

32. The first term of an A.P is denoted by\_\_\_\_\_.

- a.A.
- b.a.
- c.d.
- d.D.

Answer: B

33. In Arithmetic progression the common difference is denoted by\_\_\_\_\_.

- a.A.
- b.a.
- c.d.
- d.D.

Answer: C

34. The sum of n natural numbers is \_\_\_\_\_.

- a. $n(n+1)/2$ .
- b. $n+1/2$ .
- c. $n(n-1)/2$ .
- d. $n-1/2$ .

Answer: A

35. The sum of first 100 natural numbers is\_\_\_\_\_.

- a.5050.
- b.1050.
- c.5010.
- d.1010.

Answer: A

36.  $a+(a+d)+(a+2d)+\dots+(a+(n-1)d)=$  \_\_\_\_\_.

- a. $n/2[a+(n-1)d]$ .
- b. $n/2[a+(n+1)d]$ .
- c. $n/2[2a+(n-1)d]$ .
- d. $n/2[a+2(n-1)d]$ .

Answer: C

37. When  $r < 1$ , the formula to find the sum of n terms in G.P is \_\_\_\_\_.

- a. $S_n = a(r^n - 1) / r - 1$ .
- b. $S_n = a(1 - r^n) / 1 - r$ .
- c. $S_n = n(r^n - 1) / r - 1$ .
- d. $S_n = n(1 - r^n) / 1 - r$ .

Answer: A

38. The next term of the series 50, 40, 30, is \_\_\_\_\_.

- a. 20.
- b. 30.
- c. -30.
- d. -20.

Answer: A

39. Which one of the following series is G.P?

- a. 8, 14, 2....
- b. 2, 7, 12...
- c. 7, 42, 252...
- d. 2, 6, 9...

Answer: D

40. Simple interest will be income for \_\_\_\_\_.

- a. lender.
- b. borrower.
- c. both .
- d. neither lender nor borrower.

Answer: A

41. The simple interest on Rs 5,000 at 10% for 3 years is \_\_\_\_\_.

- a. 500.
- b. 1000.
- c. 1500.
- d. 2000.

Answer: C

42. The formula for the face value A is given by \_\_\_\_\_.

- a.  $(B \cdot D \times T \cdot D) / (B \cdot D - T \cdot D)$ .
- b.  $100T \cdot D / nr$ .
- c.  $100r / 100 - nr$ .
- d.  $Pnr / 100$ .

Answer: B

43. Under annuity due, payment is due at the \_\_\_\_\_.

- a. beginning of the time.
- b. end of the time.
- c. at the middle of the time.
- d. each .

Answer: A

44. The compound interest for Rs 20000 for 3 years at 10 % is \_\_\_\_\_.

- a. 2500.

- b.2200.
- c.6000.
- d.2500.

Answer: C

45.The simple interest for Rs 10000 for 2 years at 10% is \_\_\_\_\_.

- a.200.
- b.3000.
- c.4000 .
- d.2000.

Answer: D

46.The first term of arithmetic series is 5 , number of terms is 15 and their sum is 390  
Then the common difference is \_\_\_\_\_.

- a.3.
- b.5.
- c.41.
- d.52.

Answer: A

47.The  $n^{\text{th}}$  term of an AP is given by\_\_\_\_\_.

- a. $a+(n-1)d$ .
- b. $a+1$ .
- c. $ar^n$ .
- d. $ar^{n-1}$ .

Answer: A

48.Under compound interest the formula for A is given by \_\_\_\_\_.

- a. $A=P(1+ni)$ .
- b. $A=P(1+i)$ .
- c. $A=Pnr/100$ .
- d. $A=P(1+i)^n$ .

Answer: D

49.Banker's discount is given by the formula \_\_\_\_\_.

- a. $Anr/100$ .
- b. $Pnr/100$ .
- c. $Anr$ .
- d. $Pnr$ .

Answer: A

50.Face value of a bill of exchange is given by the formula \_\_\_\_\_.

- a. $100A/100+nr$  .
- b. $(B.D \times T.D)/B.D-T.D$ .
- c. $(B.D \times T.D)/B.D+T.D$ .
- d. $(B.D+T.D)/B.D-T.D$ .

Answer: B

51. When the payments are to be made at the end of each interval the annuity is called \_\_\_\_\_.

- a. immediate annuity.
- b. annuity due.
- c. both (a) and (b).
- d. present annuity.

Answer: A

52. What is the common ratio from the following series, 7, 49, 343, 2401, .....

- a. 9
- b. 5
- c. 6
- d. 7

Answer: D

53. The formula for finding the compound interest is \_\_\_\_\_.

- a.  $A = P(1 + ni)$ .
- b.  $A = P(1 + i)$ .
- c.  $A = Pnr/100$ .
- d.  $A = P(1 + i)^n$ .

Answer: D

54. Under simple interest, the interest for n years is \_\_\_\_\_.

- a.  $A = P(1 + ni)$ .
- b.  $A = P(1 + i)$ .
- c.  $A = Pnr/100$ .
- d.  $A = P(1 + i)^n$ .

Answer: C

55. Under simple interest, amount or value at the end is \_\_\_\_\_.

- a.  $A = P + I$ .
- b.  $A = P(1 + i)$ .
- c.  $A = Pnr/100$ .
- d.  $A = P(1 + i)^n$ .

Answer: A

56. Under simple interest, the rate of interest is given by \_\_\_\_\_.

- a.  $R = 100r - (100 - nr)$ .
- b.  $r = 100 I/Pn$ .
- c.  $Anr/100$ .
- d.  $A = P(1 + i)n$ .

Answer: B

57. The present value under annuity due is \_\_\_\_\_.

- a.  $A/i [1 - (1 + i)^{-n}]$ .
- b.  $A + A/i [1 - (1 + i)^{-n}]$ .

- c.  $A/i [(1+i)^{-n}-1]$ .
- d.  $A/i (1+i)[ 1+i)^{-n}-1]$ .

Answer: A

58. The Amount due under immediate annuity is \_\_\_\_\_.

- a.  $A/i [1-(1+i)^{-n}]$ .
- b.  $A+A/i [1-(1+i)^{-n}]$ .
- c.  $A/i [(1+i)^{-n}-1]$ .
- d.  $A/i (1+i)[ (1+i)^{-n}-1]$ .

Answer: D

59. Formula for Bankers gain is \_\_\_\_\_.

- a.  $Anr/100$ .
- b.  $An^2r^2/100(100+nr)$ .
- c.  $100A/100+nr$ .
- d.  $Anr/100+nr$ .

Answer: B

60. In Graphical solution the feasible region is \_\_\_\_\_.

- a. where all the constraints are satisfied simultaneously.
- b. any one constraint is satisfied .
- c. only the first constraint is satisfied.
- d. any one of the above condition.

Answer: A

61. An LPP has \_\_\_\_\_.

- a. one optimal solution.
- b. two optimal solutions.
- c. Three optimal solutions.
- d. none of these.

Answer: D

62. An LPP deals with problems involving only \_\_\_\_\_.

- a. single objective.
- b. multiple objective.
- c. two objective.
- d. none of these.

Answer: A

63. Which of the following is not associated with any LPP?

- a. Feasible Solution.
- b. Optimum Solution.
- c. Basic solution.
- d. Quadratic equation.

Answer: D

64. Which of the following is not true about feasibility?
- a. It cannot be determined in a graphical solution of an LPP.
  - b. It is independent of the objective function.
  - c. It implies that there must be a convex region satisfying all the constraints.
  - d. Extreme points of the convex region give the optimum solution.

Answer: A

65. In Graphical solution the feasible solution is any solution to a LPP which satisfies \_\_\_\_\_.
- a. only objective function.
  - b. non-negativity restriction.
  - c. only constraint.
  - d. all the three.

Answer: B

66. In Graphical solution the redundant constraint is \_\_\_\_\_.
- a. which forms the boundary of feasible region.
  - b. which do not optimize the objective function.
  - c. which does not form boundary of feasible region.
  - d. which optimizes the objective function.

Answer: C

67. Optimal solution in an LPP is \_\_\_\_\_.
- a. which maximizes or minimizes the objective function.
  - b. which maximizes the objective function.
  - c. which minimizes the objective function.
  - d. which satisfies the non-negativity restrictions.

Answer: A

68. Unbounded solution in an LPP is \_\_\_\_\_.
- a. where the objective function can be decreased indefinitely.
  - b. which maximizes the objective function.
  - c. where the objective function can be increased or decreased indefinitely.
  - d. where the objective function can be increased indefinitely.

Answer: C

69. The two forms of LPP are \_\_\_\_\_.
- a. standard form and canonical form.
  - b. standard form and general form.
  - c. matrix form and canonical form.
  - d. matrix form and standard form.

Answer: A

70. In the canonical form of LPP if the objective function is of maximization, then all the constraints other than non-negativity conditions are \_\_\_\_\_.

- a. greater than type.
- b. lesser than type.

- c. greater than or equal to type.
- d. lesser than or equal to type.

Answer: D

71. In the canonical form of LPP if the objective function is of minimization then all the constraints other than non-negativity conditions are \_\_\_\_\_.

- a. greater than type.
- b. lesser than type.
- c. greater than or equal to type.
- d. lesser than or equal to type.

Answer: C

72. In an LPP the solution for the problems involving more than 2 variables can be solved using \_\_\_\_\_.

- a. graphical method.
- b. simplex method.
- c. hungarian method.
- d. all the above

Answer: B

73. In the standard form of LPP if the objective functions is of minimization then all the constraints \_\_\_\_\_.

- a. equations .
- b. inequalities.
- c. greater than or equal to type.
- d. lesser than or equal to type.

Answer: A

74. In the standard form of LPP if the objective function is of minimization then the right hand side of the constraints should be \_\_\_\_\_.

- a. positive.
- b. negative.
- c. non-negative.
- d. zero.

Answer: C

75. The non-negative variable which is added to LHS of the constraint to convert the inequality  $\leq$  into equation is called \_\_\_\_\_.

- a. random variable.
- b. decision variable.
- c. surplus variable.
- d. slack variable.

Answer: D

76. The non-negative variable which is added to LHS of the constraint to convert the inequality  $\geq$  into equation is called \_\_\_\_\_.

- a.random variable.
- b.decision variable.
- c.surplus variable.
- d.slack variable.

Answer: C

77.The test of optimality in simplex method is \_\_\_\_\_.

- a.  $Z_j - C_j \geq 0$ .
- b.  $Z_j - C_j \leq 0$ .
- c.  $Z_j - C_j = 0$ .
- d.  $Z_j - C_j < 0$ .

Answer: A

78.The Key column in simplex method is selected when the column of  $Z_j - C_j$  is \_\_\_\_\_.

- a. most negative.
- b. largest negative.
- c. positive.
- d. zero.

Answer: A

79.The Key row is selected when the column of  $Z_j - C_j$  is finding the ratio which is \_\_\_\_\_.

- a. maximum.
- b. minimum.
- c. largest positive.
- d. most negative.

Answer: B

80.In simplex method the LPP has unbounded solution if the variable in the key column is \_\_\_\_\_.

- a. maximum.
- b. minimum.
- c. positive.
- d. negative.

Answer: D

81.In graphical method the LPP has unbounded solution if the solution space has

- a. no upper boundary.
- b. no lower boundary.
- c. no boundary in the first quadrant.
- d. none of the above.

Answer: A

82.In a linear programming minimization model the objective function is to be \_\_\_\_\_.

- a.minimized.
- b.maximized.
- c.minimized or maximized.
- d.standardized.

Answer: A

83. Which of the following is associated with any L.P.P?

- a. feasible solution.
- b. optimum solution.
- c. basic solution.
- d. all the above.

Answer: D

84. Linear programming is\_\_\_\_\_.

- a. a constraint optimization model.
- b. a constraint decision making model.
- c. a mathematical programming model.
- d. all the above.

Answer: D

85. Which of the following is not true about feasibility?

- a. it cannot be determined in a graphical solution of an L.P.P.
- b. it is independent of the objective function.
- c. it implies that there must be a convex region satisfying all the constraints.
- d. extreme points of the convex region gives the optimum solution.

Answer: A

86. Graphical method can be used only when the decision variables is\_\_\_\_\_.

- a. more than 3.
- b. more than 1.
- c. two.
- d. one.

Answer: C

87. The region on the graph sheet which satisfies the constraints including the non-negativity restrictions is called the \_\_\_\_\_ space

- a. solution.
- b. interval.
- c. concave.
- d. convex.

Answer: A

88. The \_\_\_\_\_ is the method available for solving an L.P.P.

- a. graphical method.
- b. least cost method.
- c. MODI method
- d. hungarian method.

Answer: A

89. The graphical method is applicable to solve an L.P.P when there is

- \_\_\_\_\_.
- a. Only one variable.
  - b. Two variables.
  - c. More than two variables
  - d. None of the above.

Answer: B

90. If there are a specific or a finite no. of. elements in a set, the set is called\_\_\_\_\_
- a. Finite Set
  - b. Infinite Set
  - c. Null Set
  - d. None of the above.

Answer:A

91. If there are countless or infinite no.of. elements in a set, the set is called\_\_\_\_\_
- a. Finite Set
  - b. Infinite Set
  - c. Null Set
  - d. None of the above.

Answer:B

92. If a set has no elements is called\_\_\_\_\_
- a. Finite Set
  - b. Infinite Set
  - c. Null Set
  - d. None of the above.

Answer:C

93. The null set is also known as\_\_\_\_\_
- a. Empty Set
  - b. Void Set
  - c. Both a & b
  - d. None of the above

Answer:C

94. If every element of A is also an element of B then
- a. A contains B
  - b. B contains A
  - c. Both a & b
  - d. None of the above.

Answer: A

95. Sets A & B are called equal sets when,
- a. A contains B, B contains A
  - b. A contains B
  - c. B contains A
  - d. None of the above.

Answer: A

96. The set which is a superset of all the sets under consideration \_\_\_\_\_

- a. Universal Set
- b. Finite Set
- c. Infinite set
- d. Null Set

Answer: A

97. If there is no common elements in sets A & B are called,

- a. Equal Sets
- b. Disjoint Sets
- c. Null Sets
- d. None of the above.

Answer: B

98. The set of all elements in A (or) B is \_\_\_\_\_

- a.  $A \cup B$
- b.  $A \cap B$
- c. Complement of sets
- d.  $A - B$

Answer: A

99. The set of elements in both A & B is \_\_\_\_\_ -

- a. Intersection of sets A & B
- b. Union of sets A & B
- c. Complement of sets A & B
- d. Difference of sets A & B

Answer: A

100. Commutative law states that,

- a.  $A \cup B = B \cup A$
- b.  $A \cap B = B \cap A$
- c. Both a & b
- d. All the above.

Answer: C

101.  $A = \{1, 2, 3, 4\}$ ,  $B = \{4, 5, 6, 7, 8\}$  then  $A \cup B =$  \_\_\_\_\_

- a.  $\{1, 2, 3, 4, 5, 6, 7, 8\}$
- b.  $\{1, 2, 3, 4, 4, 5, 6, 7, 8\}$
- c.  $\{1, 2, 3, 5, 6, 7, 8\}$
- d. None of the above.

Answer: A

102.  $A = \{a, b, c, d, e, f\}$ ,  $B = \{a, e, i, o, u\}$  then  $A \cap B =$  \_\_\_\_\_

- a.  $\{a, b, c, d, e, f\}$

- b. {a,e}
- c. {i,o,u}
- d. {a,b,c,d,e,f,i,o,u}

Answer: B

103.  $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$  is \_\_\_\_\_ law

- a. Commutative law
- b. Associative law
- c. Distributive law
- d. Demorgans law

Answer: B

104. Distributive law states that

- a.  $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
- b.  $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$
- c. both a & b
- d. None of the above

Answer: C

105. Effective rate of interest is denoted by \_\_\_\_\_

- a. s
- b. r
- c. n
- d. None of the above

Answer: A

106. Nominal rate of interest is denoted by

- a. s
- b. r
- c. n
- d. None of the above

Answer: B

107. Diagram which represents the relations between the sets are called \_\_\_\_\_

- a. Venn diagram
- b. Pie diagram
- c. Bar diagram
- d. None of the above.

Answer: A

108. In venn diagrams sets are represented by

- a. Circles
- b. Squares
- c. Rectangles
- d. Triangles

Answer: A

109. In matrix 'I' stands for

- a. Unit matrix
- b. Rank of a matrix
- c. Square matrix
- d. All the above

Answer: A

110. In venn diagrams the universal set is represented by

- a. Circles
- b. Squares
- c. Rectangles
- d. Triangles

Answer: C

111. Quantities which take the same values throughout a particular investigation are called \_\_\_\_\_

- a. Constants
- b. Variables
- c. Functions
- d. None of the above

Answer: A

112. Quantities which change, that is, which take different values in an investigation are called \_\_\_\_

- a. Constants
- b. Variables
- c. Functions
- d. None of the above

Answer: B

113. Two variables x & y are said to be a \_\_\_\_\_ of each other when the values of one of them depend on those of others.

- a. Constants
- b. Variables
- c. Functions
- d. None of the above.

Answer: C

114. Evaluate  $\lim_{x \rightarrow 1} (3-x^2) / x$

- a. 1
- b. 2
- c. 3
- d. 4

Answer: B

115. Evaluate  $\lim_{x \rightarrow 0} (4+3x^2) / (2-x^4)$

- a. 1
- b. 2
- c. 3
- d. 4

Answer: B

116. When the interest is compounded more than once in an year then,

- a.  $r < s$
- b.  $r > s$
- c.  $r = s$
- d. None of the above

Answer: A

117. In effective rate of interest , the no.of.unit of time in one year is \_\_\_\_\_

- a. n
- b. m
- c. r
- d. i

Answer: B

118. \_\_\_\_\_ is the limiting value of the change in the dependent variable divided by the change in the independent variable.

- a. Derivative
- b. Integrative
- c. Both a & b
- d. None of the above

Answer: A

119. The process of finding the derivative is \_\_\_\_\_

- a. Integration
- b. Differentiation
- c. Both a & b
- d. None of the above

Answer: B

120.  $d(x^n) / dx =$  \_\_\_\_\_

- a.  $nx^{n-1}$
- b.  $xn^{n-1}$
- c.  $nx^{x-1}$
- d. All the above.

Answer: A

121.  $\frac{d}{dx}(ku) =$  \_\_\_\_\_

- a.  $k \frac{du}{dx}$

- b.  $k \frac{dn}{dx}$
- c.  $k \frac{ds}{dx}$
- d.  $k \frac{dx}{dx}$

Answer: A

122.  $\frac{d}{dx}(u+v) = \underline{\hspace{2cm}}$  where u & v are the functions of x.

- a.  $\frac{dm}{dx} + \frac{dv}{dx}$
- b.  $\frac{du}{dx} + \frac{dv}{dx}$
- c.  $\frac{dr}{dx} + \frac{ds}{dx}$

d. None of the above.

Answer: B

123.  $\frac{d}{dx}(u-v) = \underline{\hspace{2cm}}$

- A.  $\frac{du}{dx} - \frac{dv}{dx}$
- b.  $\frac{dm}{dx} + \frac{dv}{dx}$
- c.  $\frac{dr}{dx} + \frac{ds}{dx}$

d. All the above

Answer: A

124.  $\frac{d}{dx}(x^3) = \underline{\hspace{2cm}}$

- a.  $x^2$
- b.  $3x^2$
- c.  $6x$
- d.  $2x^2$

Answer: B

125.  $\frac{d}{dx}(-3x^2)$

- a.  $6x^2$
- b.  $-6x^2$
- c.  $-6x$

d. None of the above

Answer: C

126.  $\frac{d}{dx}(4x) = \underline{\hspace{2cm}}$

- a. 1
- b. 2
- c. 3
- d. 4

Answer: D

127.  $\frac{d}{dx}(3) = \underline{\hspace{2cm}}$

- a. 1
- b. -1
- c. 2
- d. 0

Answer: D

128.  $\frac{d}{dx} (x^2-7)^2 = \underline{\hspace{2cm}}$

- a.  $4x^3$
- b.  $3x^2$
- c.  $3x^3$
- d.  $4x^2$

Answer: A

129.  $\frac{d}{dx}(5x^2) = \underline{\hspace{2cm}}$

- a.  $10x$
- b.  $5x$
- c.  $2x$
- d.  $10x^2$

Answer: A

130.                      is the inverse process of differentiation

- a. Differentiation
- b. Derivatives
- c. Integration
- d. None of the above

Answer: C

131. From  $x = 4t$ ,  $\frac{dx}{dt} = \underline{\hspace{2cm}}$

- a. 1
- b. 2
- c. 3
- d. 4

Answer: D

132.  $\frac{d}{dx}(e^x + c) = \underline{\hspace{2cm}}$

- a. e
- b. x
- c.  $e^x$
- d.  $x^e$

Answer: C

133.  $\int 5x \, dx$  is called           

- a. Definite integral

- b. Indefinite integral
- c. Both a & b
- d. None of the above

Answer: B

134.  $\int_1^3 6x + 5$  is called \_\_\_\_\_

- a. Definite integral
- b. Indefinite integral
- c. Both a & b
- d. None of the above

Answer: A

135.  $\int_a^b f(x)dx = F(b) - F(a)$

- a. True
- b. False
- c. ill defined
- d. None of the above

Answer: A

136.  $(a+b)^2 =$  \_\_\_\_\_

- a.  $a^2+2ab+b^2$
- b.  $a^2-2ab-b^2$
- c.  $a^2+b^2$
- d.  $a^2+b^2+c$

Answer: A

137.  $(a+b)(a-b) = a^2 - b^2$

- a. True
- b. False
- c. ill defined
- d. None of the above

Answer: A

138.  $51-46+3(5) =$  \_\_\_\_\_

- a. 20
- b. 10
- c. 30
- d. 40

Answer: A

139.  $3x - 4 + 7 = 0$ , then  $x = ?$

- a. -1
- b. +1
- c. 0
- d. 2

Answer: A

140.  $(0/5) = \underline{\hspace{2cm}}$

- a.1
- b.5
- c.0
- d.-1

Answer: C

141.  $(7/0) = \underline{\hspace{2cm}}$

- a.1
- b.0
- c.7
- d. $\infty$

Answer: D

142.  $1+(3/2) = \underline{\hspace{2cm}}$

- a.4/2
- b.3/2
- c.5/2
- d.None of the above

Answer: C

143.  $(4+x^2) x^3 = \underline{\hspace{3cm}}$

- a.  $4+x^5$
- b.  $4+x^2+x^3$
- c.  $4x^3+x^5$
- d.None of the above

Answer: C

144. Which weighs more? A pound of iron or a pound of copper?

- a. Iron
- b.Copper
- c.Both are in same weight
- d. None of the above

Answer: C

145. Divide 40 by half and add ten. What is the answer?

- a.90
- b.40
- c.50
- d.30

Answer: A

146. I am an odd number. Take away one letter and I become even. What number am I?

- a.Seven
- b. Eleven

- c. Nine
- d. None of the above

Answer: A

147. Which 3 numbers have the same answer whether they're added or multiplied together?

- a. 1, 2 and 3
- b. 1, 4 and 5
- c. 1, 6 and 7
- d. 1, 3 and 5

Answer: A

148. Difference of two even numbers is always even

- a. True
- b. Not true
- c. ill defined
- d. None of the above

Answer: A

149. Natural numbers starts from

- a. 1
- b. 0
- c. -1
- d. None of the above

Answer: A

150.  $5x^2 + 4 - 2 - 5x^2 - 2 = \underline{\hspace{2cm}}$

- a. 0
- b. 1
- c. -1
- d.  $\pm 1$

Answer: A

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