

Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - – Business Mathematics

Course Code - BCM402

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Answer all the questions. Each question carry one mark.

9. 1. Two numbers are in the ratio 5:7. If the sum of the numbers is 192, then the greater number is

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- 102
- 108
- 112
- 116

10. 2. A sum will be double itself at a simple interest p.a. in 8 years. The simple interest is

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- 0.1
- 0.12
- 0.105
- 0.125

11. 3. The 8th term of the series 256, 128, 64 is

Mark only one oval.

- 2
- 4
- 8
- 16

12. 4. The value of $3P_3 - 3C_3$ is

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- 0
- 1
- 5
- 6

13. 5. Six years before the ratio of the ages of two sisters Mitali and Sonali is 2 : 3. If the present age of Mitali is 30 years, then the present age of Sonali is

Mark only one oval.

- 28 Years
 36 Years
 42 Years
 48 Years

14. 6. The value of logarithm of 8 to the base 2 is

Mark only one oval.

- 0
 1
 2
 3

15. 7. Product of the two roots of the quadratic equation $3x^2 - 5x + 2 = 0$ is

Mark only one oval.

- $2/3$
 $2/5$
 $3/2$
 $5/3$

16. 8. If p varies directly as q and if $q = 2$ then $p = 4$. If $p = 2$, the value of q is

Mark only one oval.

1

1.5

2

3

17. 9. The mean proportional between 4 and 16 is

Mark only one oval.

-8

8

9

10

18. 10. The 7th term of the series 16, 8, 4, 2 is

Mark only one oval.

$1/2$

$1/4$

$1/8$

$1/16$

19. 11. The ratio of work done by $(x + 2)$ men in $(x - 2)$ days to that $(x - 1)$ men in $(x + 1)$ days is $4 : 5$, the value of x is

Mark only one oval.

-4

4

6

8

20. 12. The simple interest (SI) on Rs.100 at the rate of 5% p.a. for 5 years is

Mark only one oval.

Re.1

Rs.5

Rs.10

Rs.25

21. 13. The value of logarithm of 1 to the base 10 is

Mark only one oval.

0

1

2

10

22. 14. The mean proportional between 9 and 25 is

Mark only one oval.

- 15
- 16
- 17
- 225

23. 15. A person deposits Rs. 2,000 at 6% p.a. simple interest for 3 years. The amount he will get back after 3 years is

Mark only one oval.

- Rs.2300
- Rs.2350
- Rs.2360
- Rs.2400

24. 16. The produce of 3 terms in a G.P is 125. The middle term is

Mark only one oval.

- 3
- 4
- 5
- 6

25. 17. For a quadratic equation $x^2 - 2x + 1 = 0$, the product of the roots is

Mark only one oval.

0

-1

1

2

26. 18. In a certain time Rs. 1400 becomes Rs. 1848 at 8% p.a. simple interest. When Rs.2,100 will become Rs. 2,604 at the same time, the rate of interest is

Mark only one oval.

0.1

0.06

0.082

0.070000000000000001

27. 19. Which term 128 is of the progression 1, 2, 4, 8,?

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7th term

8th term

9th term

10th term

28. 20. A set consisting of a definite number of elements is called a

Mark only one oval.

- Null set
- Singleton set
- Infinite set
- Finite set

29. 21. If $A = \{1, 2, 4\}$, $B = \{2, 4, 5\}$, $C = \{2, 5\}$ then $(A - B) \times (B - C)$

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- $\{(1, 2), (1, 5), (2, 5)\}$
- $\{(1, 4)\}$
- $(1, 4)$
- None of these

30. 22. Find the range for the relation : $\{(3, 5), (2, 5), (2, 6), (3, 7)\}$

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- $\{2, 3\}$
- $\{5, 6, 7\}$
- $\{3, 2, 6\}$
- $\{2, 3, 5\}$

31. 23. Find the sum of the series $2+5+8+ \dots +182$

Mark only one oval.

5418

5520

5612

5623

32. 24. Find the 5th term from the end of the G.P. 3, 6, 12, 24, ..., 12,288

Mark only one oval.

192

384

768

1536

33. 25. If $\log 27 = 1.431$, then the value of $\log 9$ is:

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0.945

0.954

0.958

0.9340000000000001

34. 26. If n arithmetic means are inserted between 1 and 31, such that the ratio of the first mean and the n th mean is $3 : 29$, then the value of n is

Mark only one oval.

- 10
- 12
- 13
- 14

35. 27. If the sum of p terms of an A.P. is q and the sum of q terms is p , then the sum of $p + q$ terms will be

Mark only one oval.

- 0
- $p - q$
- $p + q$
- $-(p + q)$

36. 28. The number of non zero rows of a matrix in its row echelon form is a

Mark only one oval.

- Row matrix
- Column matrix
- Rank of matrix
- Augmented matrix

37. 29. Exogenous variables of a matrix are called

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- Endogenous variables
- Dependent variables
- Mixed variables
- Independent variables

38. 30. A diagonal matrix in which all diagonal elements are equal is called

Mark only one oval.

- Unit matrix
- Null matrix
- Scalar matrix
- Triangular matrix

39. 31. If A, B are symmetric matrices of the same order, then $AB - BA$ is a

Mark only one oval.

- Skew symmetric matrix
- Symmetric matrix
- Zero matrix
- Identity matrix

40. 32. If the matrix A is both symmetric and skew symmetric, then

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- A is a diagonal matrix
- A is a zero matrix
- A is a square matrix
- None of these

41. 33. Which of the following is correct

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- Determinant is a square matrix
- Determinant is a number associated to a square matrix
- Determinant is a number associated to a matrix
- None of these

42. 34. 3 No.'s are in Geometric Progression if

Mark only one oval.

- a, ar, ar^2
- $a=(b-c)/2$
- $B=(a+c)/2$
- None of these

43. 35. Sum of first fifteen terms of series $5+10+20+\dots$ is

Mark only one oval.

- 341
- 1023
- 5115
- 10230

44. 36. What is the 31st term of the sequence: 1, 4, 7, 10,

Mark only one oval.

- 90
- 91
- 92
- 93

45. 37. Sum of first fifteen terms of series $3+19+35+\dots$ is

Mark only one oval.

- 16
- 23
- 345
- 1725

46. 38. Let the sequence be 1, 3, 5, 7, 9..... then this sequence is

Mark only one oval.

- An arithmetic sequence
- A geometric progression
- A harmonic sequence
- None of these

47. 39. For the given Arithmetic progression find the position of first negative term 50, 47, 44, 41,...

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- 17
- 18
- 20
- None of these

48. 40. Which of the following sequences in AP will have common difference 3, where n is an Integer

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- $a_n = 2n^2 + 3n$
- $a_n = 2n^2 + 3$
- $a_n = 3n^2 + 3n$
- $a_n = 5 + 3n$

49. 41. Find the sum of 1st 1,000 odd no

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- 5000
- 10000
- 1000000
- 5000000

50. 42. In Exclusive type the formula for nth term in AP is

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- $a_n = a_1 + d(n-1)$
- $a_1 = a_n + d(n-1)$
- $d = a_1 + a_n(n-1)$
- $n = a_1 + d(a_n - 1)$

51. 43. In case of a series 1, 11, 21, 31, ____, 51 In AP find the 5th term in AP is

Mark only one oval.

- 41
- 61
- 71
- 81

52. 44. In case of AP and GP, AP is always _____ than GP

Mark only one oval.

- Greater
- Less
- Equal
- None of these

53. 45. In case of a series 1, 11, 21, 31, In AP find the sum of first 20 no's in AP

Mark only one oval.

- 250
- 351
- 785
- 960

54. 46. a, b, c are in GP if _____ is true

Mark only one oval.

- $b^2=ac$
- $a=bc$
- $c=a^2b$
- $c=ab$

55. 47. Sum of n terms of G.P is

Mark only one oval.

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

$a(1-rn)/(1-r)$

$2ab/(a+b)$

$a+b/2$

56. 48. If a, G, b are in Geometric Progression then 'G' is said to be

Mark only one oval.

arithmetic mean

geometric mean

standard deviation

None of these

57. 49. If sequence does not has a last term, then it is said to be

Mark only one oval.

finite sequence

arithmetic sequence

infinite sequence

None of these

58. 50. The sum of the three numbers in A.P is 21 and the product of the first and third number of the sequence is 45. What are the three numbers

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- 5, 7 & 9
- 9, 7 & 5
- 3, 7 & 11
- Both 5, 7 & 9 & 9, 7 & 5

59. 51. In case of series in 4, 7, 10, in AP, 6th term is

Mark only one oval.

- 13
- 19
- 22
- 25

60. 52. If the order of matrix A is . And the order of B is . Then the order of matrix AB is

Mark only one oval.

- $m \times n$
- $n \times m$
- $n \times p$
- $m \times p$

61. 53. Transpose of a rectangular matrix is a

Mark only one oval.

- rectangular matrix
- diagonal matrix
- square matrix
- scalar matrix

62. 54. Which one is known as Scalar Matrix from the following

Mark only one oval.

- Identity Matrix
- Square Matrix
- Row Matrix
- Column Matrix

63. 55. If A is a symmetric matrix, then $A^t =$

Mark only one oval.

- A
- |A|
- 0
- diagonal matrix

64. 56. A matrix with identical and zero elements has a specific name, what is it.

Mark only one oval.

- Square
- Null
- Scalar
- None of these

65. 57. Name the matrix obtained by inter changing rows and columns

Mark only one oval.

- Scalar
- Row
- Column
- Transpose

66. 58. What happens when the rows and columns of a determinant are interchanged

Mark only one oval.

- Value remains same
- Value differs
- Equal value
- None of these

67. 59. What happens if any two rows or columns of a matrix are identical.

Mark only one oval.

- The value of determinant is one
- The value of determinant is zero
- Two
- None of these

68. 60. A skew symmetric matrix occurs when

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- $AA^T=2$
- $A = -A^T$
- $A = A^T$
- $A^T - A = 1$

69. 61. Commutative property of matrices means that

Mark only one oval.

- $A+B=B+A$
- $A=B$
- $B-A=A-B$
- None of these

70. 62. In a square matrix the elements for which row nos and column nos are ___ is called a diagonal element

Mark only one oval.

- Equal
- Not equal
- Zero
- Unit

71. 63. A row matrix

Mark only one oval.

- has a single row
- a single column
- no rows
- None of these

72. 64. Generalized form of matrix is best represented as

Mark only one oval.

- constant rows and columns
- variable rows and columns
- m rows and n columns
- n rows and m columns

73. 65. In case of an ____ payments of installments are made after the lapse of each period called annuity due

Mark only one oval.

- Annuity
- Annuity due
- Net Present Value
- Sinking Fund

74. 66. In compound interest the interest is calculated by _____ at the end of each year up to the end of payment period

Mark only one oval.

- Compounding
- Applying
- Calculating
- Editing

75. 67. In case of interest nominal interest rate is ____ than compounding rate

Mark only one oval.

- Less than
- More than
- Equal than
- None of these

76. 68. In case of straight line depreciation method the depreciation value is always ___ than reduced value method after 1st year

Mark only one oval.

- Less
- More
- Equal
- None of these

77. 69. Under which depreciation method the amount of depreciation expenses remains same throughout the useful life of a fixed asset

Mark only one oval.

- Straight Line
- Reducing Balance
- No. Of units produced
- Machine hours method

78. 70. A company purchased a vehicle for Rs 6,000. It will be used for 5 years and its residual value is expected to be Rs 1,000. What is the annual amount of depreciation using straight line method of depreciation

Mark only one oval.

- 1000
- 2000
- 3000
- 3300

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