K21U 1922

Reg. No. : .....

Name : .....

III Semester B.B.A./B.B.A. (RTM) Degree CBCSS (OBE) Reg./Sup./Imp. Examination, November 2021

(2019 – 2020 Admission)

GENERAL AWARENESS COURSE

3A11BBA / BBA(RTM) : Numerical Skills

Time : 3 Hours Max. Marks : 40

SECTION – A

Answer **all** the questions. **Each** question carries **one** mark.

1. What principal will amount to ₹ 600 @ 6% per annum SI in five years ?
2. Solve $2(x + 5) + 7 = 5 - 2(x + 6)$.
3. Consider the G.P. of the series : 2, 1, ½, ¼, ... Find the n^{th} term.
4. Calculate two numbers, whose sum is 30 and difference is 4.
5. Find the value of the determinant : $\begin{vmatrix} 2 & 4 \\ 8 & 2 \end{vmatrix}$.
6. If the mean proportional between x and 2 is 4, what must be the value of x ?

(6×1=6)

SECTION – B

Answer **any six** questions. **Each** question carries **two** marks.

7. Represent a Venn diagram showing relationship between Animals, dogs, horses, parrots.

P.T.O.

8. If $(2x - 3y)/(2x + 3y) = 2/5$, determine the value of x : y.

9. Calculate the effective rate of interest, if interest is calculated @ 8% quarterly.

10. Solve $7x + 3y = 10$; $4x + 2y = 6$.

11. If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & -2 \\ 0 & 4 \\ 3 & 1 \end{bmatrix}$, then calculate the matrix 'X' such that $A + B - X = 0$.

12. Compute the face value of a bill due for 6 months hence @ 12% p.a. whose present worth is ₹ 4,500.

13. Three numbers in ascending order are in G.P. such that their product is 512. Determine their middle number.

14. If $X = 2^{1/3} + 2^{-1/3}$, prove that $2X^3 - 6X - 5 = 0$. **(6×2=12)**

SECTION – C

Answer **any four** questions. **Each** question carries **three** marks.

15. The mean of three numbers is 15. With the inclusion of fourth number, the mean becomes 17. Identify the included number.

16. Demand for goods of an industry is given by the equation $pq = 100$ and supply is given by $20 + 3p = q$; where 'p' is price and 'q' is quantity. Calculate 'p' and 'q'.

17. The angles in a triangle are in the ratio of 2 : 3 : 4. Calculate the angles and prove that it is a right-angled Triangle.

18. Show that the value of the determinant $\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix} = 0$.

19. If the 5th and 10th terms of a G.P. are 32 and 1024 respectively, find the 1st term and common ratio.

20. A is six times as old as B. Fifteen years hence, A will be three times as old as B. Find their present ages. **(4×3=12)**

SECTION – D

Answer **any two** questions. **Each** question carries **five** marks.

21. Solve $x + \sqrt{x} = 6/25$.

22. Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 0 & 5 \\ 3 & 1 & 2 & 2 \\ 2 & 4 & 0 & 10 \end{bmatrix}$.

23. The sum of three numbers in G.P. is 35 and their product is 1000. Which are the numbers ?

24. At the same rate of simple interest, a principal amounts to ₹ 2,056 in 4 years and amounts to ₹ 2,248 in 7 years. Determine the rate of interest and the principal amount. **(2×5=10)**