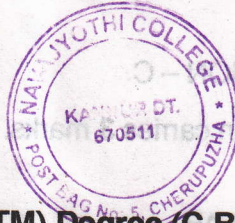




K23U 3526

Reg. No. :

Name :



**III Semester B.B.A./B.A. (RTM) Degree (C.B.C.S.S. – O.B.E. – Regular/
Supplementary/Improvement) Examination, November 2023
(2019 to 2022 Admissions)**

**GENERAL AWARENESS COURSE
3A11 BBA/BBA (RTM) : Numerical Skills**

Time : 3 Hours

Max. Marks : 40

SECTION – A

Answer the **six** questions. Each question carries 1 mark.

(6×1=6)

1. How many Prime numbers are in between 1 and 50 ?
2. Define order of a Matrix.
3. Find C in the proportion : $\frac{36}{C} = \frac{45}{10}$
4. The maximum number of roots for a quadratic equation is equal to
5. The 10th term of the AP 5, 8, 11, 14, is
6. Find the distance of the point p(2, 3) from the x-axis.

SECTION – B

Answer **any six** questions. Each question carries 2 marks.

(6×2=12)

7. Write any two differences between Depreciation and Amortisation.
8. Solve : $(2\sqrt{2} + 7\sqrt{2})(2\sqrt{2} - 7\sqrt{7})$.
9. What is the present value of ₹ 1 to be received after 2 years compounded annually at 10% ?
10. Find the area of triangle formed by the points A(5, 2), B(4, 7) and C(7, -4).
11. Two numbers are in the ratio 3 : 4. If the sum of the numbers is 63, find the numbers.
12. Solve : $x^2 - 15x + 56 = 0$.
13. 30 students went into a restaurant. 20 choose idli while 25 ordered for puri. How many chose both idli and puri ?
14. If $A = \{5, 7, 9, 11\}$ and $B = \{8, 9, 10, 11\}$, find $A \cup B$, $A \cap B$ and $A - B$.

P.T.O.



SECTION - C

Answer any four questions. Each question carries 3 marks.

(4×3=12)

15. If $A = \begin{bmatrix} 6 & 2 & 4 \\ 1 & 2 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 2 \\ 2 & 4 \\ 4 & 5 \end{bmatrix}$. Find AB.

16. Find the sum of a given Geometric series up to 6th term 4, 12, 36,

17. A man performs $\frac{1}{4}$ of his total journey by car, $\frac{2}{3}$ by bus and the remaining 40 km by train. Find his total journey.

18. Find the present value of ₹ 2,000 due in 3 years at 8% per annum compounded :

- Yearly
- Half yearly

19. Find two numbers whose sum is 74 and difference is 10.

20. What is the distance between two points A and B whose coordinators are (3, 2) and (9, 7) respectively ?

SECTION - D

Answer any two questions. Each question carries 5 marks.

(2×5=10)

21. Find the inverse of Matrix A.

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 2 & 9 \end{bmatrix}$$

22. In an AP of 50 terms, the sum of first 10 terms is 210 and sum of its last 15 terms is 2565. Find the AP.

23. Using the quadratic formula, find the roots of the quadratic equation $x^2 - 2x - 24 = 0$.

24. Mr. A decides to deposit ₹ 5,000 at the end of every year in a bank which pays compound interest at the rate 5% per annum. What will be his accumulation at the end of 15 years ?



K22U 3570

Reg. No. :

Name :

**Third Semester B.B.A./B.B.A. (RTM) Degree (CBCSS-OBE-Regular/
Supplementary/Improvement) Examination, November 2022
(2019 Admission Onwards)
GENERAL AWARENESS COURSE
3A11BBA/BBA(RTM) : Numerical Skills**

Time : 3 Hours

Max. Marks : 40

PART – A

Very short answer. Answer **all** the questions. **Each** question carries **one** mark.

1. What is an Equation ?
2. Explain your idea about Arithmetic Progression.
3. Define a Scalar Matrix.
4. What is a Null set ?
5. Explain the term time value of money.
6. What is Geometric mean ?

(6×1=6)

PART – B

Short answer. Answer **any six** questions. **Each** question carries **2** marks.

7. Solve $7(X - 2) + 8(X - 3) - 22 = X + 10$.
8. Find 12th term and sum of 12 terms of the series
 $1, -1, 2, -2, \dots$
9. Find 15th term of the series $3, -6, 12, -24, \dots$
10. Show that $\begin{bmatrix} 2 & -1 & 3 \\ -1 & 2 & 1 \\ 3 & 1 & 4 \end{bmatrix}$ is symmetric.
11. With the support of an example, explain the term Union of two sets.

P.T.O.



12. Find the total interest and amount at the end of 5th year for Rs. 5,000 at 10% per annum, simple interest.
13. Write down all the subsets of the set $A = \{3, 4, 5\}$.
14. $2X + 3Y = 4$; $4X + 5Y = 6$. Express these equations in the matrix equation form. (6×2=12)

PART – C

Essay. Answer **any four** questions. **Each** question carries **3** marks.

15. $4X + 2Y = 6$
 $5X + Y = 6$
 Find the value of X and Y.
16. Solve the equation $2X + 5/X = 7$.
17. A man saved Rs. 16,500 in ten years. In each year after the first he saved Rs. 100 more than he did in the preceding year. How much did he save in the first year ?
18. If the value of a car is depreciated 20% annually, what will be its estimated value at the end of the 10th year, if its present value is Rs. 5,000 ?
19. Let $P = \begin{bmatrix} 0 & 1 \\ 2 & 3 \end{bmatrix}$, $Q = \begin{bmatrix} -1 & 2 \\ 4 & 3 \end{bmatrix}$ and $R = \begin{bmatrix} 2 & -1 \\ 6 & 5 \end{bmatrix}$.
 Find $P(Q + R)$ and $PQ + PR$. Hence prove $P(Q + R) = PQ + PR$.
20. Find the sum at the end of 4 years for Rs. 10,000 at 10% per annum, compound interest. (4×3=12)

PART – D

Long essay. Answer **any two** questions. **Each** question carries **5** marks.

21. Solve the following simultaneous equations using Cramer's rule.
 $5X - 6Y + 4Z = 15$, $7X + 4Y - 3Z = 19$, $2X + Y + 6Z = 46$.
22. Demand for goods of an industry is given by the equation $pq = 100$ and supply is given by the equation $20 + 3p = q$, where p is the price and q is the quantity, find p and q.
23. A man sells 7 horses and 8 cows at Rs. 5,880 and 6 cows and 5 horses at Rs. 4,300. What is the selling price of each ?
24. Find the three numbers in A.P. whose sum is 9 and the product is -165. (2×5=10)

Reg. No. :

Name :

**III Semester B.B.A./B.B.A.(R.T.M.) Degree CBCSS (OBE) – Regular
Examination, November 2020
(2019 Admission Only)**

**GENERAL AWARENESS COURSE
3A11 BBA/BBA (RTM) : Numerical Skills**

Time : 3 Hours

Max. Marks : 40

SECTION – A

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

1. Find the Mean proportional between 27 and 43.
2. Represent A-B by means of Venn diagram.
3. Two-third of a number increased by 5 equals 27. Calculate the number.
4. Compute the 14th term of the series $13 + 17 + 21 + 25 + \dots$
5. If $(x + 1, 2) = (4, y - 2)$; then determine the value of x and y.
6. Determine the quadratic equation whose roots are 3 and -2 . (6×1=6)

SECTION – B

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

7. If the AM between 5 and $(4x + 1)$ is 6. Identify the value of x.
8. Solve $y^2 + 5y = 14$.
9. If $A = \begin{bmatrix} 3 & 2 \\ 2 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 0 \\ 2 & 1 \end{bmatrix}$; compute $(2A + B)(A - 3B)$.
10. At what rate, would a sum of money doubles in 10 years ?
11. The ratio of present age of father to that of his son is 5 : 3. Ten years before, their ratio was 2 : 1. Determine their present ages.
12. Solve $x + y = 5$ and $xy = 6$.
13. Three numbers in ascending order are in GP such that their product is 512. Identify the middle number.
14. An employer pays wages ₹ 60 per male worker and ₹ 45 per female worker each per day. If he engages 8 male and 4 female workers on some day, then calculate the average wage per worker on that day. (6×2=12)

P.T.O.



SECTION – C

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

15. The Mean of four numbers is 9. If one number is excluded, the mean becomes 8. Determine the excluded number.
16. Among 60 people, 35 can speak in English; 40 in French and 20 in both the languages.
- a) Calculate how many can speak in atleast one of the languages. 2
- b) How many can't speak in any of these languages ? 1
17. The supply and demand curves for a commodity are known to be $Q_s = P - 1$ and $Q_d = 12/p$. Find the equilibrium price and quantity. (Hint : For equilibrium, $Q_d = Q_s$).
18. If 10 times the 10th term of an AP is equal to 15 times the 15th term, then show that 25th term is zero.
19. If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{1, 2, 3, 5\}$ and $B = \{5, 6, 7, 8\}$;
Verify that $(A - B)^c = A^c \cup B^c$.
20. Monthly income of Ram and Rahim are in the ratio of 5 : 7. Their monthly expenses are in the ratio of 7 : 1. If each of them saves ₹ 60 per month, then compute their monthly incomes. (4×3=12)

SECTION – D

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

21. Solve $(x + y)^2 + (x + y) - 6 = 0$ and $(x - y) = 1$.
22. Suppose the 6th and the 17th term of an AP are 19 and 41 respectively; then-
- a) Calculate the 1st term and the common different of the AP. 3
- b) Identify the 40th term of the AP. 2
23. Two vessels contain mixtures of milk and water in the proportion of 2 : 3 and 4 : 3 respectively. In what proportions, should the two mixtures be mixed so as to form a new mixture containing equal quantities of milk and water ?
24. Find the Inverse of $A = \begin{bmatrix} 3 & 5 & 7 \\ 2 & -3 & 1 \\ 1 & 1 & 2 \end{bmatrix}$ (2×5=10)



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, $\frac{1}{2}$, $\frac{1}{4}$, 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)

SECTION – E

Answer any six questions. Each question carries two marks.

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