B.B.A. Semm-II Busi. Maths. Sub code. 20240

: નોંધ :

૧. દરેક પ્રશ્નનો [a] અથવા [a(i)] અને [a(ii)] જ લખવાના રહેશે.

૨. પ્રશ્ન : ૧[a] અથવા ૧[a(i)] અને ૧[a(ii)] તથા ૨[a] અથવા ૨[a(i)] અને ૨[a(ii)] ના 14 માર્કસ ના બદલે ૧૮ માર્કસ રહેશે.

૩. પ્રશ્ન : ૩[a] અથવા ૩[a(i)] અને ૩[a(ii)] તથા ૪[a] અથવા ૪[a(i)] અને ૪[a(ii)] ના 14 માર્કસ ના બદલે ૧૭ માર્કસ રહેશે.

૪. દરેક પ્રશ્નનો પ્રશ્ન નં ૧(b), પ્રશ્ન નં ૨(b), પ્રશ્ન નં ૩(b) તથા પ્રશ્ન નં ૪(b) (ટુંકા પ્રશ્નો) વિદ્યાર્થીએ લખવાના નથી.

Q-1 A Define: (i) simple interest (ii) compound interest (iii) effective rate of interest (iv) annuity. 14M
A sum of 10,000 Rs. Is borrowed at a rate of interest 15% per annum for two years. Find the simple interest on this sum and the amount to be paid at end of two years.

OR

A(i) Solve: $x + y + z - 1 = 0$, $x - y - 2z = 2$, $x + 2y + z = 4$ using Cramer's rule. 07M

A(ii) Evaluate $D = \begin{vmatrix} 5 & 1 & 2 \\ 1 & 0 & 1 \\ 2 & 0 & 7 \end{vmatrix}$. Verify that the value of new determinant obtained by performing R_{31} on D is the additive value of D. 07M

Q-1 B Attempt any four 04M

(i) Write formula of simple interest.

(ii) Write formula of compound interest.

(iii) $\begin{vmatrix} 1 & 2 \\ 3 & k \end{vmatrix} = 0$ then k = ... (Fill in the blank)

(iv) $\begin{vmatrix} 2 & 0 & 0 \\ 0 & 4 & 0 \\ 0 & 0 & 6 \end{vmatrix}$ = ...

(A) 24 (B) 48 (C) 08 (D) none of these

(v) Write any one properties of determinant.

(vi) True or false: Number of rows and column are not same for determinant.

Q-2 A If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ *and* $B = \begin{bmatrix} 1 & 4 \\ 0 & 1 \end{bmatrix}$ *then* verify $(A+B)^{-1} = A^{-1} + B^{-1}$? 14M

OR

A(i) If $A = \begin{bmatrix} 2 & 5 \\ 5 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 9 \\ 7 & 8 \end{bmatrix}$, $C = \begin{bmatrix} 0 & 9 \\ 7 & 4 \end{bmatrix}$ *then* Find (AB)C. 07M

A(ii) Find A^{-1} for $A = \begin{vmatrix} 1 & 2 & 4 \\ 7 & 1 & 0 \\ 6 & 2 & 5 \end{vmatrix}$. 07M

Q-2 B Attempt any four 04M

(i) Which of the following is true for matrices of order 2?

(A) A + B = B + A (B) AB = BA (C) AB = A + B (D) All of these

(ii) If $B = \begin{bmatrix} 1 & 2 \\ k & 1 \end{bmatrix}$ and $|B| = 0$ then k = ... (Fill in the blank).

(iii) If $|A| = 3$ and $|B| = 4$ then $|AB|$ = ...(Fill in the blank).

(iv) True or false : $|AB| \neq |BA|$ for matrices of order two.

(v) True or false : $AB \neq BA$ for matrices of order two.

(vi) $A^{-1} = \frac{\text{adj}A}{|A|}$ then k = ... (Fill in the blank).

Q-3 A For points A(2,k),B(-1,3),C(1,7)and D(3,2), find k if (i) $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$ (ii) $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$ (iii) Find slope of $\overleftrightarrow{CD}$ and $\overleftrightarrow{BC}$ 14M

OR

A(i) Find equation of Line passing through point (1,-1) and perpendicular to x + y + 2 = 0. 07M

A(ii) Find equation of line through (19 , 20) and parallel to the line 20x – 19y + 21 = 0. 07M

Q-3 B Attempt any three 03M

(i) Define slope of line.

(ii) Define intercepts of line on axes.

(iii) Intercepts of line x + 5y = 0 on axes are .....and .....(Fill in the blank).

(iv) Find equation of line through points (1, 2)and (4 ,6)

(v) Write equation of Y-axis.

Q-4	A	200 wooden blocks are stacked in such a way that 20 blocks are in the bottom row,19 are in next upper row, 18 are in the upper row next to it and the process is continued. How many rows will be formed? How many blocks are there in the upper most row?	14M
		OR	
	A(i)	Find four positive consecutive terms in G.P. such that their product is 16 and having sum of second and third terms is equal to 5.	07M
	A(ii)	The sum and the product of three consecutive terms of an A.P. are 24 and312respectively.Find the three terms.	07M
Q-4	B	Attempt any three.	04M
	(i)	Define arithmetic mean.	
	(ii)	Define harmonic mean.	
	(iii)	If 1,k,2 are in an A.P. then k = ...(Fill in the blank).	
	(iv)	1,8,27 ,x then x = ...(Fill in the blank).	
	(v)	Write formula of n^{th} term of an A.P.	