51 copies

CLASS XII (ASSIGNMENT)-COMMERCE

S.No.	SUBJECT	ASSIGNMENT
1	English Language	1) WRITE A COMPOSITION IN APPROXIMATELY 400-500 WORDS ON ANY TWO OF THE FOLLOWING TOPICS: a) SOMETIMES WE TAKE NATURE FOR GRANTED. NARRATE AN EXPERIENCE THAT MADE YOU APPRECIATE THE NATURAL WORLD. b) "FAITH IS TO BELIEVE WHAT WE DO NOT SEE AND THE REWORD OF THIS FAITH IS TO SEE WHAT WE BELIEVE." – EXPRESS YOUR VIEWS ON THE GIVEN STATEMENT. c) EYES . d) WRITE A SHORT STORY DEPLOYING THE LINE: " AS THE HOT WEATHER BEGAN , THE SHACKLES SETTLED ON HIM AND ATE INTO HIS FLESH." 2) AS THE MEMBER OF THE HOME SCIENCE CLUB OF YOUR SCHOOL, YOU HAVE BEEN GIVEN THE RESPONSIBILITY OF ORGANISING A BAKERY CARNIVAL TO RAISE FUNDS FOR PROVIDING WOOLEN CLOTHES TO THE UNDER PRIVILEDGED CHILDREN. WRITE A PROPOSAL STATING THE STEPS YOU WOULD TAKE TO SUCCESSFULLY ORGANISE THIS EVENT.

BENGALI CLASS 12 (ASSIGNMENT)

করোনা ভাইরাসের ত্রাসে কাঁপছে গোটা বিশ্ব – রোগের উপসর্গ – কীভাবে প্রতিবিধান করা যেতে পারে– (WHO) এর বক্তব্য – সারা দেশ জুড়ে কী ধরনের ব্যবস্থা গ্রহণ করা হয়েছে - সমস্ত তথ্য দিয়ে রচনাটি লেখ।

HINDI CLASS 12 (ASSIGNMENT)

मुहावरे तथा अशुद्ध वाक्यों को शुद्ध करो, याद करे तथा लिखें।

ACCOUNTS

PART –B (CHAPTER: RATIO ANALYSIS)

LEARN THE FOLLOWING FORMULAE :-

1) LIQUIDITY RATIO
   a) CURRENT RATIO
   b) QUICK RATIO OF LIQUID RATIO
2) SOLVENCY RATIO
   a) DEBT TO EQUITY RATIO
   b) PROPRIETORY RATIO
   c) DEBT TO TOTAL ASSETS RATIO
   d) INTEREST COVERAGE RATIO
3) ACTIVITY RATIO
   a) TRADE RECEIVABLE TURNOVER RATIO
   b) TRADE PAYABLE TURNOVER RATIO

c) WORKING CAPITAL TURNOVER RATIO
d) INVENTORY TURNOVER RATIO

4) PROFITABILITY RATIO
a) GROSS PROFIT RATIO
b) NET PROFIT RATIO
c) OPERATING RATIO
d) OPERATING PROFIT RATIO
e) EARNING PER SHARE (EPS)
f) PRICE EARNING RATIO (PE RATIO)
g) RETURN ON INVESTMENT (ROI)

RATIO ANALYSIS

CLASSIFICATION OF RATIOS:

Ability of the enterprise to meet its short term financial obligation as they become due for payment is called Liquidity ratio. They include a) Current Ratio and b) Quick Ratio.

a) CURRENT RATIO: $\frac{\text{Current Assets}}{\text{Current Liability}}$

Calculate Current Ratio from the following:

Working capital = Rs 1,50,000

Total Debt = Rs 3,25,000

Long term Debt = Rs 2,50,000

CR = $\frac{CA}{CL} = \frac{Rs\ 2{,}25{,}000}{Rs\ 75000}$ = 3:1.

CL = Total Debt – Long term Debt

= Rs 3,25,000 – Rs 2,50,000

= Rs 75000

Working Capital = CA-CL

∴ CA = WC + CL

= Rs 1,50,000 + Rs 75000

= Rs 2,25,000

b) QUICK RATIO/LIQUID RATIO:

Quick Ratio = $\frac{\text{Liquid Assets}}{\text{Current Liability}}$

$= \frac{\text{CA} - \text{Stock} - \text{Prepaid Exp}}{\text{CL}}$

Calculate Quick ratio from the following

Inventories = Rs 80,000

WC = Rs 2,40,000

CA = Rs 4,00,000

Liquid Ratio = $\frac{\text{CA} - \text{stock} - \text{prepaid exp}}{\text{CL}}$

$= \frac{\text{Rs } 4{,}00{,}000 - \text{Rs } 80000}{\text{Rs } 1{,}60{,}000}$

= 2:1

WC = CA – CL

CL = CA – WC

= Rs 4,00,000 – Rs 2,40,000

= Rs 1,60,000

SOLVENCY RATIO

Solvency means ability of an enterprise to meet its long term indebtedness.

1. **Debt to Equity Ratio =** $\frac{\textbf{Debt}}{equity}$

   Debt = Long term Borrowings + Long term Provision

   Equity = Share Capital + Reserve and surplus

From the following information calculate Debt to Equity Ratio :

total asset = Rs 1,25,000

total debt = Rs 1,00,000

short term = Rs 50000

Debt to Equity = $\frac{\text{Debt}}{\text{Equity}} = \frac{\text{Rs } 50000}{\text{Rs } 25000}$ = 2:1

Long term Debt = Total Debt – CL

= Rs 1,00,000 – Rs 50000

= Rs 50000

Equity = TA – Total Debt

= Rs 1,25,000 – Rs 1,00,000

= Rs 25,000

2. **Proprietory Ratio =** $\frac{\textbf{Shareholders' fund}}{\textbf{TA}}$

From the following information calculate proprietory ratio:

Share capital = Rs 10,00,000

Surplus = Rs 2,50,000

Trade payable = Rs 1,50,000

General Reserve = Rs 2,50,000

Cash and Bank balance rs 4,00,000

10% Debenture rs 5,00,000

land and Building rs 15,00,000

Furniture rs 4,00,000

Trade Receivable rs 7,00,000

proprietory ratio= $\frac{\text{Shareholders' fund}}{\text{TA}}$

Shareholders' Fund= Share Capital+Reserve and Surplus+General Reserve

=Rs 10,00,000+Rs 2,50,000+Rs 2,50,000

=Rs 15,00,000

Total Assets= Land and Building +Furniture +Trade Receiveable+Cash and Bank balance

= Rs 15,00,000+4,00,000+7,00,000+4,00,000

=Rs 30,00,000

3) Debt to Total Asset Ratio = $\frac{Debt}{TA}$

Total Debt Rs 15,00,000

Current Liability Rs 5,00,000

Capital Employed RS 15,00,000

Calculate Debt to Total Asset ratio

Debt to Total Asset Ratio = $\frac{Debt}{TA}$

$= \frac{Rs\ 10{,}00{,}000}{Rs\ 20{,}00{,}000}$

=0.5:1

Debt= Total debt- CL

=Rs 15,00,000-RS 5,00,000

=RS 10,00,000

TA= Capital Employed+CL

=Rs 15,00,000+Rs5,00,000

=Rs 20,00,000

4) Interest Coverage Ratio=$\frac{Net\ Profit\ before\ Interest\ and\ Tax}{Interest\ on\ long\ term\ borrowing}$ …………….. times

Profit after interest and tax Rs 6,00,000

10% long term loan rs 6,00,000

12% Debenture Rs 20,00,000

Tax rate 50%

Calculate Interest coverage ratio

Interest Coverage Ratio=$\frac{Net\ Profit\ before\ Interest\ and\ Tax}{Interest\ on\ long\ term\ borrowing}$

$=\frac{rs\ 15,00,000}{rs\ 3,00,000}$

=5 times

ECONOMICS CLASS XII (ASSIGNMENT)

CHAPTER 2 – DEMAND AND LAW OF DEMAND

CHAPTER 3 – THEORY OF CONSUMER BEHAVIOUR

CHAPTER 13 – MONEY : MEANING AND FUNCTIONS

a) WRITE ALL THE SHORT QUESTIONS AND VERY SHORT QUESTIONS ANSWERS OF THESE CHAPTERS.
b) REPEATED QUESTIONS MAY BE AVOIDED.
c) GO THROUGH THE NOTES AND KEY WORDS OF THE BOOK TO ANSWER THE QUESTIONS.

BUSINESS STUDIES CLASS XII (ASSIGNMENT)

QUESTIONS TO BE SOLVED:-

1) MEANING AND DEFINITION OF "COMMUNICATION".
2) MENTION FEW CHARACTERISTICS / FEATURES OF COMMUNICATION.
3) ELEMENTS OF THE COMMUNICATION PROCESS ALONG WITH THE PICTORIAL REPRESENTATION.
4) DIFFERENCE BETWEEN 'ORAL' AND 'WRITTEN' COMMUNICATION.

COMMERCE CLASS XII (ASSIGNMENT)

QUESTIONS TO BE WORKED ON:-

1) MEANING AND DEFINITION OF 'MARKETING'.
2) DIFFERENTIATE BETWEEN 'MARKETING' AND 'MARKETING RESEARCH'.
3) DEFFINITIONS RELATED TO –
   a) PRICING
   b) LABELLING
   c) PACKAGING
   d) PACKING
   e) ASSEMBLING
   f) BRANDING
   g) ADVERTISEMENT

6 copies

XII ASSIGNMENT MATHEMATICS

MATRICES

A matrix can be written in compact form as $A=[a_{ij}]_{m\times n}$, when $1\leq i\leq m$; $1\leq j\leq n$, $i,j\in N$.
m= number of rows and n= number of coloumn.
No of elements m×n. a_{ij}represent an element in i-th row and j-thcoloumn.

Some Definition:

(i) Diagonal Matrix: A square matrix $A= [a_{ij}]_{m\times n}$is called diagonal matrix if all non-diagonal elements are zero.

i.e. $a_{ij}= 0$ for $i\neq j$. like $\begin{bmatrix}1 & 0 & 0\\ 0 & 5 & 0\\ 0 & 0 & -2\end{bmatrix}$

(ii) Scelar Matrix: A square matrix $A = [a_{ij}]_{m\times n}$ is called scelar matrix if all the non-diagonal elements are zero and the diagonal elements are equal.

a_{ij} = o if $i\neq j$,

= k if i=j, where k is constant

(iii) Identity/ Unit Matrix: A square matrix $A = [a_{ij}]_{m\times n}$ is called identity matrix if

$a_{ij}= 0$ if $i\neq j$

= 1 if i=j

(iv) Transpose of a Matrix:To obtain the transpose of a square matrix , rows are changed into coloumns and coloumns are changed into rows.

let$A=[a_{ij}]_{m\times n}$, then $A^T = [a_{ij}]_{n\times m}$ where A^T denotes the transpose of A.
We can take Transpose of rectangular matrix also.

Properties of Transpose of Matrices

(i) $(A^T)^T=A$
(ii) $(A+B)^T= A^T+B^T$
(iii) $(A-B)^T= A^T-B^T$
(iv) $(AB)^T=B^TA^T$
(v) $(KA)^T= K.A^T$

Symmetric Matrix : A square matrix is said to be Symmetric matrix if $A^T=A$.
Skew-Symmetric Matrix: A square matrix is said to be Skew-Symmetric Matrix if $A^T= -A$.
A SQUARE MATRIX CAN BE EXPRESSED AS SUM OF A SYMMETRIC AND SKEW-SYMMETRIC MATRIX.

Determinant

Determinant of a square matrix of order 1
$A=[a_{11}]$. $|A|= a_{11}$wgere |A| denote the determinant value of corresponding square matrix A.

Determinant of a square matrix of order 2

$A = \begin{bmatrix}a_{11} & a_{12}\\ a_{21} & a_{22}\end{bmatrix}$ $|A|= a_{11}.a_{22} - a_{21}.a_{12}$

Determination of a square matrix of order of order3

$A = \begin{bmatrix}a_{11} & a_{12} & a_{13}\\ a_{21} & a_{22} & a_{23}\\ a_{31} & a_{32} & a_{33}\end{bmatrix}$ $|A| = a_{11}(a_{22}.a_{33} - a_{23}.a_{32}) - a_{12}(a_{21}.a_{33} - a_{23}.a_{31})+ a_{13}(a_{21}.a_{32} - a_{22}.a_{31})$.

(i) For any square matrix A of order n, $|KA| = K^n|A|$, where K is scelar
(ii) For any square matrix of order n, $|A^T|=|A|$.
(iii) For any two matrices A and B of same order $|AB| = |A|.|B|$.

Singular and Non-Singular Matrix

A square matrix A is Singular if $|A| = 0$

A square matrix A is non-singular if $|A| \neq 0$.

Adjoint : Let $A = [a_{ij}]$ be a square matrix of order n , then we define adjoint of A as $\text{adj}A = [A_{ij}]^T$, where A_{ij} denotes the cofactor of a_{ij} in A.

Let $A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$ then $\text{adj}A = \begin{bmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \\ A_{31} & A_{32} & A_{33} \end{bmatrix}$

Some Important results on adjoint:

(i) $A(\text{adj}A) = (\text{adj}A)A = |A|.I_n$

(ii) $|\text{adj}A| = |A|^{n-1}$

(iii) $|A(\text{adj}A)| = |A|^n$

(iv) $\text{adj}(A^T) = (\text{adj}A)^T$

(v) $\text{adj}(AB) = (\text{adj}A)(\text{adj}B)$

Solve the following sums:

1. Construct a 2*2 matrix whose elements a_{ij} are given by
   $a_{ij} = \begin{cases} \frac{|-3i+j|}{2} \\ (i+j) \end{cases}$
2. Find values of a,b,c,d from one following equation
   $\begin{bmatrix} 2a+b & a-2b \\ 5c-d & 4c+3d \end{bmatrix} = \begin{bmatrix} 4 & -3 \\ 11 & 24 \end{bmatrix}$
3. If X and Y are 2*2 matrix , then solve for X and Y
   $2X+3Y = \begin{bmatrix} 2 & 3 \\ 4 & 0 \end{bmatrix}$, $3X+2Y = \begin{bmatrix} -2 & 2 \\ 1 & -5 \end{bmatrix}$.
4. If $A = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$, show that $A^2 - 3I = 2A$.
5. If $(A-2I)(A-3I) = 0$, where $A = \begin{bmatrix} 4 & 2 \\ -1 & x \end{bmatrix}$, and $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, find the value of x.
6. If $A = \begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$, find the value of x and y such that $A^2 + xI_2 = yA$.
7. If $[x \quad -5 \quad -1] \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix} \begin{bmatrix} x \\ 4 \\ 1 \end{bmatrix} = 0$, find x.
8. If $M(\Theta) = \begin{bmatrix} \cos\Theta & \sin\Theta \\ -\sin\Theta & \cos\Theta \end{bmatrix}$, then show that $M(x).M(y) = M(x+y)$.
9. If $A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}$, prove that $A^3 - 6A^2 + 7A + 2I = 0$.
10. For, $A = \begin{bmatrix} 1 \\ -4 \\ 3 \end{bmatrix}$ and $B = [-1 \quad 2 \quad 1]$, verify $(AB)^T = B^T.A^T$.
11. Express matrix $A = \begin{bmatrix} 3 & 5 \\ 7 & 9 \end{bmatrix}$, as sum of symmetric and skew symmetric matrix.
12. If A and B are symmetric matrix , then prove that
    (i) AB – BA is skew symmetric matrix.
    (ii) AB + BA is symmetric matrix.
13. If A is a square matrix such that $A^TA = I$, find value of $|A|$.
14. If A is a square of order 3 with $|A| = 4$, find value of $|-2A|$.

15. If $A = \begin{bmatrix} 5 & a \\ b & 0 \end{bmatrix}$ and A is symmetric matrix, show that a = b.

16. If the matrix $A = \begin{bmatrix} 6 & x & 2 \\ 2 & -1 & 2 \\ -10 & 5 & 2 \end{bmatrix}$ is singular matrix , find value of x.

17. If $A = \begin{bmatrix} 3 & -2 \\ 4 & -2 \end{bmatrix}$, find x such that $A^2 = xA - 2I$. Hence find A^{-1}.

18. If A is a square matrix of order 3×3 and $|A| = 5$ find $|adjA|$.

19. If A is a skew symmetric matrix of order 3 find the value of $|A|$.

20. Find the $adjA = \begin{bmatrix} -1 & -2 & -2 \\ 2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$ and hence verify $A(adjA) = |A|I_3$.

21. If $A = \begin{bmatrix} cosx & sinx \\ -sinx & cosx \end{bmatrix}$ and $A(adjA) = K\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, find the value of K.

22. If for any 2×2 square matrix A , $A(adjA) = \begin{bmatrix} 8 & 0 \\ 0 & 8 \end{bmatrix}$, find the value of $|A|$.

23. There are two values of 'a' which any determinant $\begin{vmatrix} 1 & -2 & 5 \\ 2 & a & -1 \\ 0 & 4 & 2a \end{vmatrix} = 86$. Find the sum of these two values of 'a'.

Invertible Matrix and Inverse of a Matrix

Let A be a square matrix of order n. If there exists a square matrix B of same order n such that $AB = BA = I_n$, then A is invertible matrix. The matrix B is called inverse mtrix of A and is denoted by A^{-1}.

Few important results :

(i) $(AB)^{-1} = B^{-1}A^{-1}$

(ii) $(A^T)^{-1} = (A^{-1})^T$

(iii) $(A^{-1})^{-1} = A$

(iv) $A^{-1}A = AA^{-1} = I$

(v) $(KA)^{-1} = \frac{1}{K}(A^{-1})$

(vi) $A^{-1} = \frac{1}{|A|}(adjA)$

(vii) $|A^{-1}| = \frac{1}{|A|}$

Sums based on Inverse :

1. Solve the matrix equation $\begin{bmatrix} 5 & 4 \\ 1 & 1 \end{bmatrix} A = \begin{bmatrix} 1 & -2 \\ 1 & 3 \end{bmatrix}$
   (i) by using concept inverse (ii) without using concept of inverse
2. Find the inverse of matrix $= \begin{bmatrix} 1 & 0 & 2 \\ -2 & 1 & 0 \\ 0 & -1 & 2 \end{bmatrix}$
3. If the matrix $A = \begin{bmatrix} 2 & 3 \\ 5 & -2 \end{bmatrix}$, show that $A^{-1} = \frac{1}{19}A$.
4. For what value of x the matrix $= \begin{bmatrix} 5-x & x+1 \\ 2 & 4 \end{bmatrix}$ is singular.
5. For what value(s) of K the matrix $\begin{bmatrix} 4 & k \\ 2 & 1 \end{bmatrix}$ has no inverse.
6. If $A = \begin{bmatrix} 1 & 2 \\ 4 & 2 \end{bmatrix}$, then find the value of K if $|2A| = K|A|$.
7. If A is a square matrix of order 3 and $|A| = 7$, write the value of $|adjA|$.
8. If $A = \begin{bmatrix} 2 & 3 \\ 1 & -4 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -2 \\ -1 & 3 \end{bmatrix}$, then find $(AB)^{-1}$.
9. Find the inverse of matrix $A = \begin{bmatrix} 3 & -1 & 1 \\ -15 & 6 & -5 \\ 5 & -2 & 2 \end{bmatrix}$ and hence show that $A^{-1}A = I$.