

UNIT -8---->TEST FOR SLOWE LEARNERS-1

2-MARKS

1. Find the range and coefficient of range of the following data: 25, 67, 48, 53, 18, 39, 44.
2. Find the range and coefficient of range of following data: 43.5, 13.6, 18.9, 38.4, 61.4, 29.8
3. The standard deviations of 20 observations is $\sqrt{6}$. If each observation is multiplied by 3, find the standard deviation and variance of the resulting observations.
4. The standard deviation and coefficient of variation of a data are 1.2 and 25.6 respectively. Find the value of mean.
5. The mean of a data is 25.6 and its coefficient of variation is 18.75. Find the standard deviation.
6. A and B are two candidates seeking admission to IIT. The probability that A getting selected is 0.5 and the probability that both A and B getting selected is 0.3. Prove that the probability of B being selected is at most 0.8
7. A bag contains 5 blue balls and 4 green balls. A ball is drawn at random from the bag. Find the probability that the ball drawn is (i) blue (ii) not blue.
8. A bag contains 5 blue balls and 4 green balls. A ball is drawn at random from the bag. Find the probability that the ball drawn is (i) blue (ii) not blue.
9. Two coins are tossed together. What is the probability of getting different faces on the coins?

10. What is the probability that a leap year selected at random will contain 53 Saturdays.

5-marks

8. A bag contains 6 green balls, some black and red balls. Number of black balls is as twice as the number of red balls. Probability of getting a green ball is thrice the probability of getting a red ball. find (i) Number of black balls (ii) Total number of balls.
9. A coin is tossed thrice. Find the probability of getting exactly two heads or at least one tail or two consecutive heads
10. 9. Three unbiased coins are tossed once. Find the probability of getting at most 2 tails or at least 2 heads.
11. 8. In a class of 50 students, 28 opted for NCC, 30 opted for NSS and 18 opted both NCC and NSS. One of the students is selected at random. Find the probability that
 - (i) The student opted for NCC but not NSS.
 - (ii) The student opted for NSS but not NCC.
 - (iii) The student opted for exactly one of them.

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UNIT -8---->TEST FOR SLOWE LEARNERS-2

2-MARKS

1.

Find the range of the following distribution.

Age (in Years)	16-18	18-20	20-22	22-24	24-26	26-28
Number of students	0	4	6	8	2	2

2. Find the standard deviation of first 21 natural numbers

3. If the standard deviation of a data is 3.6 and each value of the data is divided by 3, then find the new variance and new standard deviation.

4. If the mean and coefficient of variation of a data are 15 and 48 respectively, then find the value of standard deviation

5. Two coins are tossed together. What is the probability of getting different faces on the coins?

6. From a well- shuffled pack of 52 cards, a card is drawn at random. Find the probability of it being either a red king or a black queen

7. If A is an event of a random experiment such that $P(A):P(A) = 17:15$ and $n(S)=640$ then find (i) $P(A)$ (ii) $n(A)$.

8. A die is rolled and a coin is tossed simultaneously. Find the probability that the die shows an odd number and the coin shows a head

9. Write the sample space for tossing three coins using tree diagram

10. If A is an event of a random experiment such that $P(A) : P(A) = 17:15$ and $n(S)=640$ then find (i) $P(A)$ (ii) $n(A)$.

11. A coin is tossed thrice. What is the probability of getting two consecutive tails?

5-MARKS

8. A bag contains 5 red balls, 6 white balls, 7 green balls, 8 black balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is

(i) White (ii) Black or Red (iii) Not white (iv) Neither white nor black

9. Two dice are rolled together. Find the probability of getting a doublet or sum of faces as 4.

6. A card is drawn from a pack of 52 cards. Find the probability of getting a king or a heart or a red card.

7. Two dice are rolled once. Find the probability of getting an even number on the first die or a total of face sum 8.

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UNIT -8---->TEST FOR SLOWE LEARNERS-3

2-MARKS

1. The range of a set of data is 13.67 and the largest value is 70.08. Find the smallest value.

2. If the standard deviation of a data is 4.5 and if each value of the data is decreased by 5, then find the new standard deviation

3. The standard deviation and mean of a data are 6.5 and 12.5 respectively. Find the value of coefficient of variation

4.

If $n = 5$, $\bar{x} = 6$, $\sum x^2 = 765$, then calculate the coefficient of variation.

5. What is the probability that a leap year selected at random will contain 53 Saturdays.

6. A die is rolled and a coin is tossed simultaneously. Find the probability that the die shows an odd number and the coin shows a head

7. In a box there are 20 non-defective and some defective bulbs. If the probability that a bulb selected at random from the box found to be defective is $\frac{3}{8}$ then, find the number of defective bulbs.

8. If $P(A) = 0.37$, $P(B) = 0.42$, $P(A \cap B) = 0.09$ then find $P(A \cup B)$.

9. A flower is selected at random from a basket containing 80 yellow, 70 red and 50 white flowers. Find the probability of selecting a yellow or red flower?

10. If A and B are two events such that $P(A) = \frac{1}{4}$, $P(B) = \frac{1}{2}$ and $P(A \cap B) = \frac{1}{8}$ find (i) $P(A \cup B)$ (ii) $P(\text{not } A \text{ and not } B)$.

5- marks

1. Two dice are rolled. Find the probability that the sum of outcomes is (i) equal to 4 (ii) greater than 10 (iii) less than 13.

2. Two unbiased dice are rolled once. Find the probability of getting. (i) a doublet (equal numbers on both dice) (ii) the product of the Faces as a prime number (iii) the sum of the Faces as a prime number (iv) the sum as 1.

3. Three fair coins are tossed together. Find the probability of getting (i) all heads (ii) atleast one tail (iii) atmost one head (iv) atmost two tails.

4. Two dice are rolled together. Find the probability of getting a doublet or sum of faces as 4.

5. Two dice are rolled once. Find the probability of getting an even number on the first die or a total of face sum 8.

6. A coin is tossed thrice. Find the probability of getting exactly two heads or atleast one tail or two consecutive heads

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UNIT -8---->TEST FOR SLOWE LEARNERS-4

5-MARKS

1. Two dice are rolled. Find the probability that the sum of outcomes is (i) equal to 4 (ii) greater than 10 (iii) less than 13

2. Two unbiased dice are rolled once. Find the probability of getting (i) a doublet (equal numbers on both dice) (ii) the product as a prime number (iii) the sum as a prime number (iv) the sum as 1

3. Three fair coins are tossed together. Find the probability of getting (i) all heads (ii) atleast one tail (iii) atmost one head (iv) atmost two tails

4. A bag contains 5 red balls, 6 white balls, 7 green balls, 8 black balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is (i) white (ii) black or red (iii) not white (iv) neither white nor black

If A, B, C are any three events such that probability of B is twice as that of probability of A and probability of C is thrice as that of probability of A and if $P(A \cap B) = \frac{1}{6}$, $P(B \cap C) = \frac{1}{4}$, $P(A \cap C) = \frac{1}{8}$, $P(A \cup B \cup C) = \frac{9}{10}$, $P(A \cap B \cap C) = \frac{1}{15}$, then find $P(A), P(B)$ and $P(C)$?

In a class of 35, students are numbered from 1 to 35. The ratio of boys to girls is 4:3. The roll numbers of students begin with boys and end with girls. Find the probability that a student selected is either a boy with prime roll number or a girl with composite roll number or an even roll number.

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UNIT -1---->TEST FOR SLOWE LEARNERS-1

2-MARKS

- If $A = \{1,3,5\}$ and $B = \{2,3\}$ then find $A \times B$ and $B \times A$
- If $A \times B = \{(3,2), (3, 4), (5,2), (5, 4)\}$ then find A and B
- Find $A \times B, A \times A$ and $B \times A$
 $A = \{2, -2, 3\}$ and $B = \{1,-4\}$
- Let $A = \{1,2,3\}$ and $B = \{x \mid x \text{ is a prime number less than } 10\}$. Find $A \times B$ and $B \times A$.
- If $A = \{1,3,5\}$ and $B = \{2,3\}$ then Show that $n(A \times B) = n(B \times A) = n(A) \times n(B)$

5-MARKS

- Let $A = \{x \in \mathbb{N} \mid 1 < x < 4\}, B = \{x \in \mathbb{W} \mid 0 \leq x < 2\}$ and $C = \{x \in \mathbb{N} \mid x < 3\}$ verify that $A \times (B \cup C) = (A \times B) \cup (A \times C)$
- Represent the function $f = \{(1, 2), (2, 2), (3, 2), (4, 3), (5, 4)\}$ through
(i) an arrow diagram (ii) a table form (iii) a graph
- Let f be a function $f : \mathbb{N} \rightarrow \mathbb{N}$ be defined by $f(x) = 3x + 2$ (i) Find the images of 1, 2, 3
(ii) Find the pre-images of 29, 53
(ii) Identify the type of function

9.

If the function $f : \mathbb{R} \rightarrow \mathbb{R}$ is defined by

$$f(x) = \begin{cases} 2x + 7, & x < -2 \\ x^2 - 2, & -2 \leq x < 3 \\ 3x - 2, & x \geq 3 \end{cases}$$

- (i) $f(4)$ (ii) $f(-2)$ (iii) $f(4) + 2f(1)$ (iv) $\frac{f(1) - 3f(4)}{f(-3)}$

10.

Let $f : A \rightarrow B$ be a function defined by

$$f(x) = \frac{x}{2} - 1 \text{ where } A = \{2, 4, 6, 10, 12\},$$

$B = \{0, 1, 2, 4, 5, 9\}$. Represent f by

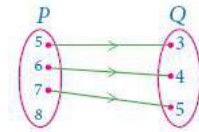
- i) set of ordered pairs ii) a table
iii) an arrow diagram iv) a graph

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UNIT -1---->TEST FOR SLOWE LEARNERS-2

2-MARKS

- The arrow diagram shows a relationship between the sets P and Q . Write the relation in (i) Set builder form (ii) Roster form (iii) What is the domain and range of R .



- A Relation R is given by the set $\{(x,y) \mid y = x + 3, x \in \{0, 1, 2, 3, 4, 5\}\}$. Determine its domain and range.

- Let $X = \{1, 2, 3, 4\}$ and $Y = \{2, 4, 6, 8, 10\}$ and $R = \{(1, 2), (2, 4), (3, 6), (4, 8)\}$ Show that R is a function and find its domain, co-domain and range?

- A relation ' f ' is defined by $f(x) = x - 2$ where $x \in \{-2, -1, 0, 3\}$ and $Y = \mathbb{R}$ (i) List the elements of f (ii) Is f a function?

- Let $f = \{(x, y) \mid x, y \in \mathbb{N} \text{ and } y = 2x\}$. be a relation on \mathbb{N} . Find the domain, codomain and range. Is this relation a function?

5-MARKS

- Let $A = \{x \in \mathbb{N} \mid 1 < x < 4\}, B = \{x \in \mathbb{W} \mid 0 \leq x < 2\}$ and $C = \{x \in \mathbb{N} \mid x < 3\}$ verify that $A \times (B \cap C) = (A \times B) \cap (A \times C)$

- Let $A =$ The set of all natural numbers less than 8, $B =$ The set of all prime

numbers less than 8, $C =$ The set of even prime number. Verify that

$$(A \cap B) \times C = (A \times C) \cap (B \times C)$$

8.

$$\text{If the function } f \text{ is defined by } f(x) = \begin{cases} x + 2; & x > 1 \\ 2; & -1 \leq x \leq 1 \\ x - 1; & -3 \leq x < -1 \end{cases}$$

Find the values of (i) $f(3)$ (ii) $f(0)$ (iii) $f(-1.5)$ (iv) $f(2) + f(-2)$

- Let $A = \{x \in \mathbb{W} \mid x < 2\}, B = \{x \in \mathbb{N} \mid 1 < x \leq 4\}$

and $C = \{3, 5\}$. Verify that

$$(A \cup B) \times C = (A \times C) \cup (B \times C)$$

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UNIT -1---->TEST FOR SLOWE LEARNERS-3

2-MARKS

- Let f be a function defined by $f(x) = 3x - 5$. Find the values of a and b given that $(a, 4)$ and $(1, b)$ belong to f .
- Let $A = \{1, 2, 3, 4\}$ and $B = \mathbb{N}$. Let $f: A \rightarrow B$ be defined by $f(x) = x^3$ then, (i) Find the range of f (ii) Identify the type of function.
- A plane is flying at a speed of 500 km per hour. Express the distance travelled by the plane as function of time t in hours.
- Let $A = \{1, 2, 3\}$, $B = \{4, 5, 6, 7\}$ and $f = \{(1, 4), (2, 5), (3, 6)\}$ be a function from A to B . Show that f is one - one but not onto function
- Let $A = \{1, 2, 3, 4\}$ and $B = \mathbb{N}$. Let $f: A \rightarrow B$ be defined by $f(x) = x$ then (i) find the range of f (ii) identify the type of function

5-MARKS

- If $A = \{5, 6\}$, $B = \{4, 5, 6\}$, $C = \{5, 6, 7\}$, Show that $A \times A = (B \times B) \cap (C \times C)$
- Represent each of the given relations by (a) an arrow diagram, (b) a graph and (c) a set in roster form, wherever possible.
 - $\{(x, y) | x = 2y, x \in \{2, 3, 4, 5\}, y \in \{1, 2, 3, 4\}\}$
 - $\{(x, y) | y = x + 3, x, y \text{ are natural numbers} < 10\}$
- A function $f: [-5, 9] \rightarrow \mathbb{R}$ is defined as follows.

$$f(x) = \begin{cases} 6x + 1; & -5 \leq x < 2 \\ 5x^2 - 1; & 2 \leq x < 6 \\ 3x - 4; & 6 \leq x \leq 9 \end{cases}$$

Find

 - $f(-3) + f(2)$ (ii) $f(7) - f(1)$
 - $2f(4) + f(8)$
 - $\frac{2f(-2) - f(6)}{f(4) + f(-2)}$

- Let $A = \{x \in \mathbb{W} | x < 2\}$, $B = \{x \in \mathbb{N} | 1 < x \leq 4\}$ and $C = \{3, 5\}$. Verify that $A \times (B \cup C) = (A \times B) \cup (A \times C)$

10.

A company has four categories of employees given by Assistants (A), Clerks (C), Managers (M) and an Executive Officer (E). The company provide ₹ 10,000, ₹ 25,000, ₹ 50,000 and ₹ 1,00,000 as salaries to the people who work in the categories A, C, M and E respectively. If A_1, A_2, A_3, A_4 and A_5 were Assistants; C_1, C_2, C_3, C_4 were Clerks; M_1, M_2, M_3 were managers and E_1, E_2 were Executive officers and if the relation R is defined by xRy , where x is the salary given to person y , express the relation R through an ordered pair and an arrow diagram.

UNIT -1---->TEST FOR SLOWE LEARNERS-4

2-MARKS

- Let $A = \{-1, 1\}$ and $B = \{0, 2\}$. If the function $f: A \rightarrow B$ defined by $f(x) = ax + b$ is an onto function? Find a and b .
- If $R = \{(x, -2), (-5, y)\}$ represents the identity function, find the value of x and y ?
- If $A \times B = \{(3, 2), (3, 4), (5, 2), (5, 4)\}$ then find A and B
- Find $A \times B$, $A \times A$ and $B \times A$. $A = \{m, n\}$; $B = \phi$
- Let $A = \{1, 2, 3, 4, \dots, 45\}$ and R be the relation defined as "is square of a number" on A . Write R as a subset of $A \times A$. Also, find the domain and the range of R .

5-MARKS

- Given $A = \{1, 2, 3\}$, $B = \{2, 3, 5\}$, $C = \{3, 4\}$ and $D = \{1, 3, 5\}$, check if $(A \cap C) \times (B \cap D) = (A \times B) \cap (C \times D)$ is true?
- Let $A = \{1, 2, 3, 4\}$ and $B = \{2, 5, 8, 11, 14\}$ be two sets. Let $f: A \rightarrow B$ be a function given by $f(x) = 3x - 1$. Represent this function
 - by arrow diagram (ii) in a table form
 - as a set of ordered pairs (iv) in a graphical form

8.

The function 't' which maps temperature in Celsius (C) into temperature in Fahrenheit (F) is defined by $t(C) = F$ where $(F = \frac{9}{5}C + 32)$. Find (i) $t(0)$ (ii) $t(28)$ (iii) $t(-10)$ (iv) the value of C when $t(C) = 212$ (v) the temperature when the Celsius value is equal to the Fahrenheit value.

- Let $A = \{x \in \mathbb{W} | x < 2\}$, $B = \{x \in \mathbb{N} | 1 < x \leq 4\}$ and $C = \{3, 5\}$. Verify that $A \times (B \cup C) = (A \times B) \cup (A \times C)$

- Let $A =$ The set of all natural numbers less than 8, $B =$ The set of all prime numbers less than 8, $C =$ The set of even prime number.

Verify that $A \times (B - C) = (A \times B) - (A \times C)$

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UNIT -3---->TEST FOR SLOW LEARNERS-1

2-MARKS

If a matrix has 16 elements, what are the possible orders it can have?

Show that the matrices $A = \begin{pmatrix} 1 & 2 \\ 3 & 1 \end{pmatrix}$, $B = \begin{pmatrix} 1 & -2 \\ -3 & 1 \end{pmatrix}$ satisfy commutative property $AB=BA$

If $A = \begin{pmatrix} 7 & 8 & 6 \\ 1 & 3 & 9 \\ -4 & 3 & -1 \end{pmatrix}$, $B = \begin{pmatrix} 4 & 11 & -3 \\ -1 & 2 & 4 \\ 7 & 5 & 0 \end{pmatrix}$ then Find $2A+B$.

If $A = \begin{pmatrix} 1 & 2 & 0 \\ 3 & 1 & 5 \end{pmatrix}$, $B = \begin{pmatrix} 8 & 3 & 1 \\ 2 & 4 & 1 \\ 5 & 3 & 1 \end{pmatrix}$, find AB .

If $A = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$, $B = \begin{pmatrix} 1 & 7 & 0 \\ 1 & 3 & 1 \\ 2 & 4 & 0 \end{pmatrix}$, find $A+B$.

If $A = \begin{pmatrix} \cos \theta & 0 \\ 0 & \cos \theta \end{pmatrix}$, $B = \begin{pmatrix} \sin \theta & 0 \\ 0 & \sin \theta \end{pmatrix}$ then show that $A^2 + B^2 = I$.

If $A = \begin{pmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{pmatrix}$ prove that $AA^T = I$.

Verify that $A^2 = I$ when $A = \begin{pmatrix} 5 & -4 \\ 6 & -5 \end{pmatrix}$

If $A = \begin{pmatrix} 2 & 1 \\ 1 & 3 \end{pmatrix}$, $B = \begin{pmatrix} 2 & 0 \\ 1 & 3 \end{pmatrix}$ find AB and BA . Verify $AB = BA$?

5-marks

If $A = \begin{pmatrix} 1 & 8 & 3 \\ 3 & 5 & 0 \\ 8 & 7 & 6 \end{pmatrix}$, $B = \begin{pmatrix} 8 & -6 & -4 \\ 2 & 11 & -3 \\ 0 & 1 & 5 \end{pmatrix}$, $C = \begin{pmatrix} 5 & 3 & 0 \\ -1 & -7 & 2 \\ 1 & 4 & 3 \end{pmatrix}$

compute the $3A+2B -C$

If $A = \begin{pmatrix} 3 & 1 \\ -1 & 2 \end{pmatrix}$ show that $A^2 - 5A + 7I_2 = 0$

Let $A = \begin{pmatrix} 1 & 2 \\ 1 & 3 \end{pmatrix}$, $B = \begin{pmatrix} 4 & 0 \\ 1 & 5 \end{pmatrix}$, $C = \begin{pmatrix} 2 & 0 \\ 1 & 2 \end{pmatrix}$ Show that (i) $A(BC) = (AB)C$

(ii) $(A-B)C = AC - BC$ (iii) $(A-B)^T = A^T - B^T$

If $A = \begin{pmatrix} 1 & 2 & 1 \\ 2 & -1 & 1 \end{pmatrix}$ and $B = \begin{pmatrix} 2 & -1 \\ -1 & 4 \\ 0 & 2 \end{pmatrix}$ show that $(AB)^T = B^T A^T$

If $A = \begin{pmatrix} 1 & 1 \\ -1 & 3 \end{pmatrix}$, $B = \begin{pmatrix} 1 & 2 \\ -4 & 2 \end{pmatrix}$, $C = \begin{pmatrix} -7 & 6 \\ 3 & 2 \end{pmatrix}$ verify that $A(B+C) = AB + AC$.

UNIT -3---->TEST FOR SLOW LEARNERS-2

2-MARKS

If $A = \begin{pmatrix} 5 & 4 & 3 \\ 1 & -7 & 9 \\ 3 & 8 & 2 \end{pmatrix}$ then find the transpose of A .

If $A = \begin{pmatrix} \sqrt{7} & -3 \\ -\sqrt{5} & 2 \\ \sqrt{3} & -5 \end{pmatrix}$ then find the transpose of $-A$.

If $A = \begin{pmatrix} 5 & 2 & 2 \\ -\sqrt{17} & 0.7 & \frac{5}{2} \\ 8 & 3 & 1 \end{pmatrix}$ then verify $(A^T)^T = A$

If A is of order $p \times q$ and B is of order $q \times r$ what is the order of AB and BA ?

A has ' a ' rows and ' $a+3$ ' columns. B has ' b ' rows and ' $17-b$ ' columns, and if both products AB and BA exist, find a, b ?

If $A = \begin{pmatrix} 2 & 5 \\ 4 & 3 \end{pmatrix}$, $B = \begin{pmatrix} 1 & -3 \\ 2 & 5 \end{pmatrix}$ find AB, BA and verify $AB = BA$?

Find the values of x, y and z from the following equation.

$$\begin{pmatrix} 12 & 3 \\ x & 5 \end{pmatrix} = \begin{pmatrix} y & z \\ 3 & 5 \end{pmatrix}$$

If $A = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$, $B = \begin{pmatrix} 1 & 7 & 0 \\ 1 & 3 & 1 \\ 2 & 4 & 0 \end{pmatrix}$, find $A+B$.

If $A = \begin{pmatrix} 0 & 4 & 9 \\ 8 & 3 & 7 \end{pmatrix}$, $B = \begin{pmatrix} 7 & 3 & 8 \\ 1 & 4 & 9 \end{pmatrix}$

find the value of (i) $B - 5A$ (ii) $3A - 9B$

5-marks

If $A = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$ and $I = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ show that $A^2 - (a+d)A + (bc - ad)I_2$

If $A = \begin{pmatrix} 5 & 2 & 9 \\ 1 & 2 & 8 \end{pmatrix}$, $B = \begin{pmatrix} 1 & 7 \\ 1 & 2 \\ 5 & -1 \end{pmatrix}$ verify that $(AB)^T = B^T A^T$

If $A = \begin{pmatrix} 1 & -1 & 2 \\ 2 & 1 & 1 \\ 1 & 3 & 1 \end{pmatrix}$, $B = \begin{pmatrix} 1 & -1 \\ 2 & 1 \\ 1 & 3 \end{pmatrix}$ and $C = \begin{pmatrix} 1 & 2 \\ 2 & -1 \end{pmatrix}$

show that $(AB)C = A(BC)$

Given that $A = \begin{pmatrix} 1 & 3 \\ 5 & -1 \end{pmatrix}$, $B = \begin{pmatrix} 1 & -1 & 2 \\ 3 & 5 & 2 \end{pmatrix}$, $C = \begin{pmatrix} 1 & 3 & 2 \\ -4 & 1 & 3 \end{pmatrix}$

verify that $A(B+C) = AB + AC$.

If $A = \begin{pmatrix} 4 & 3 & 1 \\ 2 & 3 & -8 \\ 1 & 0 & -4 \end{pmatrix}$, $B = \begin{pmatrix} 2 & 3 & 4 \\ 1 & 9 & 2 \\ -7 & 1 & -1 \end{pmatrix}$ and $C = \begin{pmatrix} 8 & 3 & 4 \\ 1 & -2 & 3 \\ 2 & 4 & -1 \end{pmatrix}$ then verify that

$A + (B+C) = (A+B) + C$.

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UNIT -5---->TEST FOR SLOWE LEARNERS-1

2-MARKS

1. Find the area of the triangle whose vertices are $(-3, 5)$, $(5, 6)$ and $(5, -2)$.
2. Find the equation of a straight line whose slope is 5 and y-intercept is -9 .
3. Find the equation of a line passing through the point $(3,-4)$ and having slope $-5/7$
4. Find the equation of a straight line passing through $(5,7)$ and is (i) parallel to X axis (ii) parallel to Y axis.
5. Find the intercepts made by the line $4x - 9y + 36 = 0$ on the coordinate axes.
6. Find the equation of a straight line which is parallel to the line $3x - 7y = 12$ and passing through the point $(6,4)$

5-MARKS

7. Find the area of the quadrilateral formed by the points $(8,6)$, $(5,11)$, $(-5,12)$ and $(-4, 3)$.
8. Without using Pythagoras theorem, show that the points $(1,-4)$, $(2,-3)$ and $(4,-7)$ form a right angled triangle.
9. The floor of a hall is covered with identical tiles which are in the shapes of triangles. One such triangle has the vertices at $(-3, 2)$, $(-1, -1)$ and $(1, 2)$. If the floor of the hall is completely covered by 110 tiles, find the area of the floor.

UNIT -5---->TEST FOR SLOWE LEARNERS-2

2-MARKS

1. Find the area of the triangle formed by the points $(1, -1)$, $(-4, 6)$ and $(-3, -5)$.
2. Find the equation of a straight line whose inclination is 45° and y intercept is 11.
- 3 The line through the points $(-2, a)$ and $(9, 3)$ has slope $-1/2$ Find the value of 'a'
4. S.T the straight lines $x - 2y + 3 = 0$ and $6x + 3y + 8 = 0$ are perpendicular.
5. Find the equation of a straight line whose Inclination is 45° and y intercept is 11
6. Find the equation of a straight line perpendicular to the line $y = x - 4/3 + 7$ and passing through the point $(7, -1)$.

5-MARKS

7. Find the area of the quadrilateral whose vertices are at $(-9, -2)$, $(-8, -4)$, $(2, 2)$ and $(1, -3)$
8. Let $A(3,-4)$, $B(9,-4)$, $C(5,-7)$ and $D(7,-7)$. Show that ABCD is a trapezium.
9. A triangular shaped glass with vertices at $A(-5, -4)$, $B(1, 6)$ and $C(7, -4)$ has to be painted. If one bucket of paint covers 6 square feet, how many buckets of paint will be required to paint the whole glass, if only one coat of paint is applied.

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UNIT -5---->TEST FOR SLOWE LEARNERS-3

2-MARKS

1. Calculate the slope and y-intercept of the straight line $8x - 7y + 6 = 0$.
2. Find the equation of a line whose intercepts on the x and y axes are $(4, -6)$
3. Show that the straight lines $2x + 3y - 8 = 0$ and $4x + 6y + 18 = 0$ are parallel.
4. Find the slope of a line joining the given point $(-6,1)$ and $(-3,2)$
5. Find the equation of a line whose intercepts on the x and y axes are $4, -6$

5- MARKS

6. Find the area of the quadrilateral whose vertices are at $(-9, 0)$, $(-8, 6)$, $(-1, -2)$ and $(-6, -3)$
7. A quadrilateral has vertices at $A(-4,-2)$, $B(5,-1)$, $C(6,5)$ and $D(-7,6)$. Show that the mid-points of its sides form a parallelogram

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UNIT -2---->TEST FOR SLOWE LEARNERS-1

2-MARKS

- 'a' and 'b' are two positive integers such that $a \times b = 800$. Find 'a' and 'b'
- If $13824 = 2 \times 3$ then find a and b.
- A man has 532 flower pots. He wants to arrange them in rows such that each row contains 21 flower pots. Find the number of completed rows and how many flower pots are left over
- Find the least number that is divisible by the first ten natural numbers
- Find the next 3 terms of the sequences 5, 2, -1, -4, ...
- If $1 + 2 + 3 + \dots + n = 666$ then find n.
- In a theatre, there are 20 seats in the front row and 30 rows were allotted. Each successive row contains two additional seats than its front row. How many seats are there in the last row?

5-MARKS

- Find the sum to n terms of the series $5 + 55 + 555 + \dots$
- Find the sum of $15^2 + 16^2 + 17^2 + \dots + 28^2$
- The sum of the cubes of the first n natural numbers is 2025, then find the value of n.
- If $p_1^{x_1} \times p_2^{x_2} \times p_3^{x_3} \times p_4^{x_4} = 113400$ where p_1, p_2, p_3, p_4 are primes in ascending order and x_1, x_2, x_3, x_4 are integers, find the value of p_1, p_2, p_3, p_4 and x_1, x_2, x_3, x_4
- The ratio of 6th and 8th term of an A.P. is 7:9. Find the ratio of 9th term to 13th term.

UNIT -2---->TEST FOR SLOWE LEARNERS-2

2-MARKS

- Find the next 3 terms of the following sequence. 8, 24, 72, ...
- Find the 19th term of an A.P. -11, -15, -19, ...
- Find the indicated terms of the

$$a_n = \frac{5n}{n+2}; a_6 \text{ and } a_{13}$$

sequences whose nth terms are given by

- Find the sum of $3 + 6 + 9 + \dots + 96$
- If $3+k, 18 - k, 5k+1$ are in A.P. then find k.
- Find the sum $3 + 1 + 1/3 + \dots \infty$.
- Find the sum of $1 + 3 + 5 + \dots + 55$

5-MARKS

- Find the sum to n terms of the series $3 + 33 + 333 + \dots$ to n terms.
- Find the sum of the following series $10^3 + 11^3 + 12^3 + \dots + 20^3$
- Find the sum of all natural numbers between 300 and 600 which are divisible by 7.
- If nine times ninth term is equal to the fifteen times fifteenth term, show that six times twenty fourth term is zero
- Find the common difference of an A.P. in which $t_{18} - t_{14} = 32$.

UNIT -2---->TEST FOR SLOWE LEARNERS-3

2-MARKS

The general term of a sequence is defined as

$$a_n = \begin{cases} n(n+3); & n \in N \text{ is odd} \\ n^2 + 1; & n \in N \text{ is even} \end{cases}$$

Find the eleventh and eighteenth terms.

1. Find the number of terms in the A.P. 3, 6, 9, 12, ..., 111.
2. In a theatre, there are 20 seats in the front row and 30 rows were allotted. Each successive row contains two additional seats than its front row. How many seats are there in the last row?
3. Find the least number that is divisible by the first ten natural Numbers
4. Find x, y and z, given that the numbers x, 10, y, 24, z are in A.P.
5. If $1 + 2 + 3 + \dots + k = 325$, then find $1^3 + 2^3 + 3^3 + \dots + k^3$.
6. If $1^3 + 2^3 + 3^3 + \dots + k^3 = 44100$ then find $1 + 2 + 3 + \dots + k$

5-MARKS

8. Find the sum to n terms of the series $0.4 + 0.44 + 0.444 + \dots + n$
9. Rekha has 15 square colour papers of sizes 10 cm, 11 cm, 12 cm,, 24 cm. How much area can be decorated with these colour papers?
11. Determine the general term of an A.P. whose 7th term is -1 and 16th term is 17.
12. Find the middle term(s) of an A.P. 9, 15, 21, 27, ..., 183.

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UNIT -2---->TEST FOR SLOWE LEARNERS-4

2-MARKS

1. Find a_8 and a_{15} whose n^{th} term is $a_n = \begin{cases} \frac{n^2-1}{n+3}; & n \text{ is even, } n \in N \\ \frac{n^2}{2n+1}; & n \text{ is odd, } n \in N \end{cases}$

2. Which term of an A.P. 16, 11, 6, 1, ... is -54?

3. Find the sum of $1^2 + 2^2 + \dots + 19^2$

4. Find the sum of $1^3 + 2^3 + 3^3 + \dots + 16^3$

5. Write an A.P. whose first term is 20 and common difference is 8.

6. Find the sum of $1 + 2 + 3 + \dots + 60$

7. Find the sum of $1 + 3 + 5 + \dots + 71$

5-MARKS

8. In a Geometric progression, the 4th term is $8/9$ and the 7th term is $64/243$. Find the Geometric Progression.
9. In a G.P. the 9th term is 32805 and 6th term is 1215. Find the 12th term.
10. Find the 15th, 24th and nth term (general term) of an A.P. given by 3, 15, 27, 39, ...
11. Priya earned ₹15,000 in the first month. Thereafter her salary increased by ₹1500 per year. Her expenses are ₹13,000 during the first month and the expenses increases by ₹900 per year. How long will it take for her to save ₹20,000 per month
12. A mother divides ₹207 into three parts such that the amount are in A.P. and gives it to her three children. The product of the two least amounts that the children had ₹4623. Find the amount received by each child
