SUMMATIVE ASSESSMENT - III - 2016-2017
MATHEMATICS
(English Medium)
PRINCIPLE OF VALUATION

Class : VIII

SECTION - I

1. Given $= \dfrac{(-4)^{-5}}{(-4)^{-3} \times (-4)^{-2}}$ $\quad \because a^m \times a^n = a^{m+n}$

$= \dfrac{(-4)^{-5}}{(-4)^{-3-2} \times (-4)^{-2}}$ $\quad \because \dfrac{a^m}{a^n} = a^{m-n}$

$= (-4)^{-5-(-5)} = (-4)^{-5+5} = (-4)^0$ $\quad \because a^0 = 1$

$= 1$

2. a) Given $= 0.0000456$

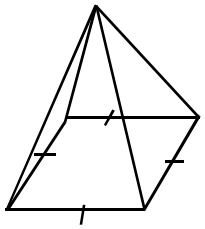
Standard form $= 4.56 \times 10^{-5}$

b) Given $= 0.000437 \times 10^{-3}$

Standard form of $0.000437 = 4.37 \times 10^{-4}$

Now the standard form of $0.000437 \times 10^{-3} = 4.37 \times 10^{-4} \times 10^{-3} = 4.37 \times 10^{-7}$

3)



4) Open ended Question

Let the numbers be = 18, 19, 20 (student may write any three consecuties)

Sum of the numbers = 18 + 19 + 20 = 57

Mean $= \quad x = \dfrac{\sum x_i}{\sum x} = \dfrac{57}{3} = 19$

yes 19 is one of the number taken.

SECTION - II

5. Given = $4.\overline{7}$ [Here in the given 'period' is = 1]

Let $x = 4.\overline{7} = 4.7777\ldots$ (Hence multypling with $10m$ both sides)

$10x = 47.777\ldots$

$x = 4.777$

$9x = 43.000$ (By subtracting)

$x = \frac{43}{9} = \frac{p}{q}$ (as per the form)

Now $\frac{p-q}{p+q} = \frac{43-9}{43+9} = \frac{\cancel{34}^{17}}{\cancel{52}^{26}} = \frac{17}{26}$

6. Given length of the arc of a sector = $7\frac{1}{3}cm = \frac{22}{3}cm$

Radius = 7 cm

Area of the sechr = $\frac{lr}{2}$

$$\text{Area} = \frac{\cancel{22}^{11}}{3} \times \frac{7}{\cancel{2}_{1}} = \frac{77}{3}cm2 = 25\frac{2}{3}cm^2$$

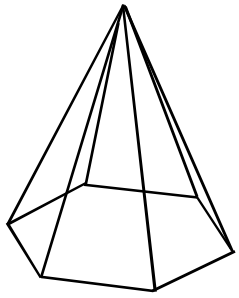
7. An equation is called an identify if it is satisfied by any value that replaces its variable (s) is called an algebraic identify.

While writing we must use = (Identically equal to) in between L.H.S. and R.H.S.

Example 1. $(a+b)^2 = a^2+^2ab+b^2$

2. $(a+b)\,(a-b) = a^2-b^2$

8. For a pyramid whose base is a pentagon



No. of faces (F) = 6

No. of verticies (V) = 6

No. of Edges (E) = 10

Euler's relation F + V = E + 2

6 + 6 = 10 + 2

12 = 12

9. Given : 15, 12, 18, 15, 18, x , y

Writing in an order if x is median } : 12, 15, 15, x, 18, 18, y (or) 12, 15, 15, x, y, 18, 18

For writing the values of x and y such that $15 < x < y$

Writing in an order if 15 is median } : x, 12, 15, 15, 18, 18 y (or)

12, x, 15, 15, 18, 18, y

For writing the values of x and y such that $x < 15 < y$.

10. a) Here no. of workers are inversely proportional to working hours.

Similalray no. of workers are also inversely proportional to working days.

Workers	Working hours	Working days
30	6	24
x	8	20
30 : x	6 : 8	24 : 20

We know that no. of workers $\alpha \dfrac{1}{working\ hours\ per\ day}$

$30 : x = 8 : 6$

Similarly we know that

No. of wokers $\alpha \dfrac{1}{working\ hours\ per\ day}$

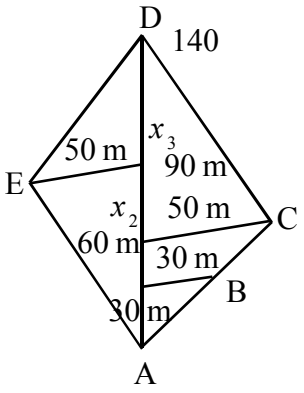
$30 : x = 20 : 24$

$\therefore$ $30 : x$ = compound raito of 8 : 6 and 20 : 24

$30 : x = 8 \times 20 : 6 \times 24$

$$\therefore\ x = \cancel{30}^{3} \times \frac{\cancel{6}^{3} \times \cancel{24}^{3}}{\cancel{8} \times \cancel{20}_{3}} = 27$$

(or)



b) Area of field ABCDE

= Area of ΔABX_1 +

Area of ΔCX_2D + Area of ΔAED

Area of a trinalge = $\dfrac{1}{2}$ base $\times$ height

Area of trapezieum = $\frac{1}{2}$ height (sum of parallel sides)

Area of $\Delta ABX_1 = \frac{1}{2} AX_1 \times BX_1$ $\quad AX_1 = 30$, $BX_1 = 30$

$= \frac{1}{2} \times 30 \times 30 = \frac{900}{2} = 450$ m^2.

Area of trapezieum = $\frac{1}{2} X_1X_2(BX_1+CX_2)$ $\quad X_1X_2 = AX_2 - AX1 = 60 - 30 = 30$

$= \frac{1}{2} \times 30\ (30+50)$ $\quad BX_1 = 30$ $\quad CX_2 = 50$

$= \frac{1}{\cancel{2}} \times 30 \times \cancel{80}^{40} = 120m^2$

Area of $CX_2D = \frac{1}{2} CX_2 \times DX_2$

$= \frac{1}{2} \times 50 \times \cancel{80}^{40} = 2000m^2$

Area of $\Delta ADE = \frac{1}{2} AD \times EX_3 = \frac{1}{\cancel{2}} \times \cancel{140}^{70} \times 50$

Total Area of the filed = 450m^2 + 1200 m^2 + 2000m^2 + 3500m^2

= 7150 m^2

11. a) Given Area of square filed = 5184 m^2

Area of a square = side × side = S^2

$S^2 = 5184$ m^2

$S = \sqrt{5184}$

= 72 mt.

7	5184	72
	49	
142	284	
	284	
	0	

Length of the rectangle = 72 mt.

Breadth = 54 mt. ($\therefore$ Area of rectangle = $l \times b$)

Area of the rectangle = 72 × 54

= 3, 888m^2

b) $42\ (a^4 - 13a^3 + 36\ a^2) \div 7a\ (a-4)$

$$= \frac{42a^2(a^2-13a+36)}{7a(a-4)} = \frac{\cancel{42}^{6}}{\cancel{7}} \times a^{2-1}\frac{(a^2-13a+36)}{a-4}$$

$$= \frac{6a(a^2-13a+36)}{(a-4)}$$

$$\therefore \frac{6a(a^2-13a+36)}{(a-4)} = \frac{6a(a-a)(\cancel{a-4})^{1}}{(\cancel{a-4})_{1}}$$

= 6a (a–a)

Checking : 6a (a–9) (7a) (a–4)

Factorizing $a^2 - 13a + 36$
by using Identify
x2 – (a+b) x +ab = (x-a) (x-b)
$a^2 - 13a + 36 = a^2 - (9+4)\ a + 9 \times 4$
= (a–9) (a–4)
$= 42a^2\ (a^2 - 13a + 36)$
$= 42\ (a^4 - 13a^3 + 36a^2)$

12. a) Given Principlal (P) = ₹ 10,000

Rate (R) = 10% per annum.

Time (T) = 2 years

Simple Internet $I = \frac{PTR}{100}$

$$= \frac{\cancel{10,0001}^{100} \times 2 \times 10}{\cancel{100}_{1}} = ₹\ 2000$$

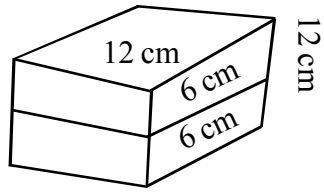
Componund Interest : A – P = ₹ 12100 – ₹ 10000 = ₹ 2100

Difference = C.I. - Simple Interest = ₹ 2100 – ₹ 2000 = ₹ 100

Simple interest is the letter option for borrower.

Compound interest is the letter option for lender.

b) Given measurement of cuboid Length = 15 cm
Breadth = 12 cm
Height = 6 cm



Two arrangements are like this

Case 1 Keeping one on another without changing its length length, Breadth, Height of these combination = 15cm, 12 cm, 12cm, 15 cm

Total surface Area = 2 (*lb* + *lh* + *lh*)

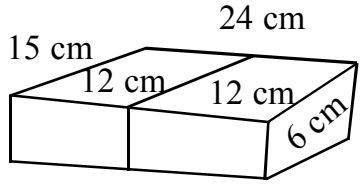
= (2 (15 × 12 + 12 × 12 + 15 × 12) = 2 × 12 (15+12+15)

$= 2 \times 12 \times 42 = 24\ 3\ 42 = 1008\ cm^2$.

Case = 2

Keeping side by side without changing its length

Measurement of the combination



Length, breadth and Height = 15 cm, 24, cm, 6 cm

Total surface Area = $2 (15 \times 24 + 24 \times 6 + 15 \times 6)$

$= 2 (360 + 144 + 90)$

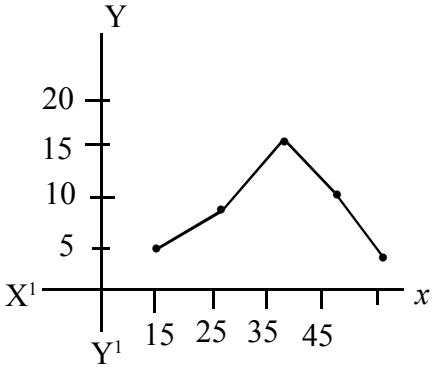
$= 2 (594) = 1188 \text{ cm}^2$

So case 1 is letter for packing.

13. a)

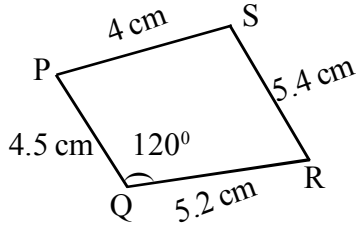
Clan internals	Frequen-cies	Mid values	Points
10–20	5	15	(15,5)
20–30	9	25	(25, 9)
30–40	16	35	(35, 16)
40–50	11	45	(45, 11)
50–60	3	55	(55, 3)

By taking Mid-values on X-asis, frequency on Y-axis plotting the points and joining them with scale



b) For drawing rough diagaram and labling

For construction of a quardrilaterla



Steps of construction

1) Draw $\overline{QR}$ with 5.2 cm length.

2) Draw an angle 120^0 at Q and plot p at a distance of 4.5 cm on the angular line.

3) Draw an arc with radius 4 cm from p and interest the arc with another arc from R at a distance of 5.5 cm.

4) The inter secting point is S.

5) Join $\overline{PS}, \overline{RS}$ our required quadrilateral PQRS obtained.

PART - B

14.	B	26.	B
15.	C	27.	D
16.	A	28.	A
17.	D	29.	D
18.	C	30.	A
19.	A	31.	C
20.	C	32.	D
21.	B	33.	A
22.	B		
23.	D		
24.	A		
25.	D		