SUMMATIVE ASSESSMENT - II - 2016 - 2017
MATHEMATICS
(English Medium)

Class : VII   **(Max. Marks : 80)**

PART - A
SECTION - I   **4 x 2 = 8**

1. Sum of an acute angles in a right angles $= 90^0$
   Ratio of an acute angles $= 4:5$
   Sum of their ratios $= 9$ (1m)

   First angle $= 90^0 \times \dfrac{4}{9} = 40^0$ (½ m)

   Second angle $= 90^0 \times \dfrac{5}{9} = 50^0$ (½ m) $\Big\}$ (1m)

2. $\left[4 \times (-2)\right] \times 5 = 4 \times \left[(-2) \times 5\right]$

   $-8 \times 5 = 4 \times (-10)$

   $-40 = -40$ (1m)

   This is Associative property under multiplication of integers   (1m)

3. 1 meter $= 100$cm
   2704 meters $= 27.4 \times 100$cm   (1m)
          $= 2740.0$cm
   27.4 meters $= 2740$cm   (1m)

4. (i) Opposite sides of a Black Board   (1m)
   (ii) Ironbars of window   (1m)
   Note:- Any two examples like above

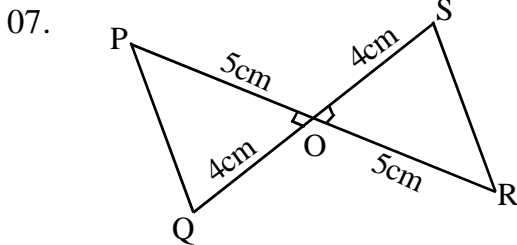### SECTION - II   **5x4 = 20**

5. Principle $= P =$ Rs. 6500
   Time $= T = 4$ years
   Rate of interest $= R = 9\%$ (1/2 m)

   Interest $= I = \dfrac{PTR}{100}$

   $I = \dfrac{6500 \times 4 \times 9}{100}$
   $I = 65 \times 36$
   $I =$ Rs.2340

   Amount $= A = P + I$ (1/2m)
   Amount $= A =$ Rs.6500+2340
   Amount $= A =$ Rs.8840   (1m)

06. Average $= \dfrac{\text{Sum of the observations}}{\text{Number of observations}}$ (1m)

Average $= \dfrac{246+238+212+248+256+216}{6}$ (2m)

$= \dfrac{1416}{6}$

Average $= 236$ (1m)

(attendance of the school)

07.

In $\triangle POQ$ and $\triangle ROS$

$PO = OR = 5cm \text{(side)}$

$\angle POQ = \angle ROS = \text{(Angle)}$ (Vertically opposite angles)

$QO = OS = 4cm$ (side) (2m)

By S.A.S Property

$\triangle POQ \cong ROS$ (2m)

08. According to sides
(i) Equilateral triangle
(ii) Isosceles triangle
(iii) Scalane triangle (2m)
According to angles:
(i) Acute angle triangle
(ii) Right angle triangle
(iii) Obtuse angle triangle (2m)

09. Cost of 5kgs tomatoes = 65.00
Cost of 1kg tomatoes = 65/5 = 13 (2m)
Cost of 8kgs tomatoes = 13x8
Cost of 8kgs tomatoes = 104
Ramana will pay for 8kgs tomatoes = 104 (2m)

SECTION - III

10-A Let the breadth of the Rectangle = x m
Twide the breadth = 2x m
Its length = (2x-8) m (1m)
Perimeter of the rectangle = 2(l+b) (1m)
Perimeter of the Rectangle = 2(2x-8+x) m
= 2(3x-8) m
= (6x-16) m (2m)
By problem, the perimeter of the rectangle = 56 m
6x-16 = 56

$6x = 56+16$

$x = 72/6$

$x = 12$

Breadth of the rectangle = x 12 m

Length of the rectangle = 2x-8

= 2x12-8

Length of the rectangle = 24-8=16m (2m)

10-B (i) $5\dfrac{1}{3}+4\dfrac{2}{3}$

$= \dfrac{28}{5}+4\dfrac{22}{5}$

$= \dfrac{50}{5}$

$= 10$ (2m)

(ii) $3\dfrac{1}{3}-2\dfrac{2}{3}$

$= \dfrac{10}{3}-\dfrac{8}{3}$

$= \dfrac{10-8}{3}$

$= \dfrac{7}{3} = 2\dfrac{1}{3}$ (2m)

(iii) $4\dfrac{5}{7}\times3\dfrac{2}{3}$

$= \dfrac{33}{7}\times\dfrac{11}{3}$

$= \dfrac{\cancel{33}^{11}}{7}\times\dfrac{11}{\cancel{3}}$

$= \dfrac{121}{7} = 17\dfrac{2}{7}$ (2m)

(iv) $5\dfrac{6}{8}\div2\dfrac{3}{4}$

$= \dfrac{46}{8}\div\dfrac{11}{4}$

$= \dfrac{\cancel{46}^{23}}{\cancel{8}_{2}}\times\dfrac{\cancel{4}}{11}$

$= \dfrac{23}{11} = 2\dfrac{1}{11}$ (2m)

11-A S.P of each cycle = `.3000 ⎫

Grain% on first cycle - 20% ⎬

Loss % on second cyle = 20% ⎭ (2m)

<u>For first cycle</u>

If C.P is 100, then profit is 20 then SP = 120

If S.P is `.120 then C.P = 100

If S.P is `.1 then C.P = $\dfrac{100}{120}$

If S.P is `.3000 then C.P = $\dfrac{100}{120} \times 3000$

= `.2500   (2m)

<u>For second cycle</u>

If C.P is `.100 then the loss is 20 then S.P = 80

If S.P is `.80 then C.P = 100

If S.P is `.1 then CP = $\dfrac{100}{80}$

If SP is `.3000 then CP = $\dfrac{100}{80} \times 3000$

`.3750   (2m)

Total C.P = `.2500+`.3750 = `.6250 $\Big\}$

Total S.P = `.3000+`.3750 = `.6000   (1m)

∴ Loss = C.P - S.P

Loss = 6250-6000 $\Big\}$

Loss = `.250   (1m)

Loss% = $\dfrac{loss}{CP} \times 100$

Loss% = $\dfrac{250}{6250} \times 100 = 4\%$ $\Big\}$ (1m)

11-B   Ratio of Engineers and doctors = 3:4

    (i)   No. of Engineers   =18

          Let, No.of Doctors = x

          ∴ 3:4   = 18:x   (2m)

          Product of the Means = Product of extremities

          $3 \times x$ = 4×18

          x   = $\dfrac{4 \times \cancel{18}^{6}}{\cancel{3}}$

          x   = 24   (2m)

          ∴ Number of Engineers x = 24

    (ii)   No. of doctors   = 56

          Let, no. of doctors   = y

          ∴ 3:4   = y:56   (2m)

          $4 \times y$ = 3×56

          y   = $\dfrac{3 \times \cancel{56}^{14}}{\cancel{4}}$

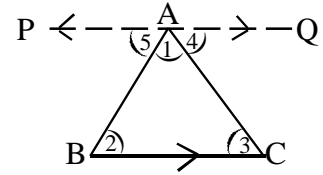   y   = 42   (2m)

          ∴ Number of Doctors y = 42

12-A Statement   : The sum of the angles of a triangle is 180^0

Given   : A triangle ABC

To prone   : $\angle A + \angle B + \angle C = 180^0$

P $\longleftarrow$ A $\longrightarrow$ Q

Construction : Though 'A' draw a line $\overline{PQ}$ parallel to BC

Proof:

From the figure,

$\angle 2 = \angle 5$ (alternate interior angles)

$\angle 3 = \angle 4$ (alternate interior angles)

$\angle 2 + \angle 3 = \angle 5 + \angle 4$ (adding(1) and (2)
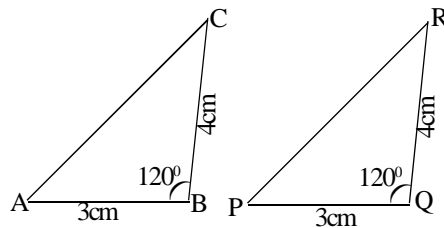
Adding $\angle 1$ on both sides

$\angle 1 + \angle 2 + \angle 3 = \angle 1 + \angle 5 + \angle 4$

$\angle 1 + \angle 2 + \angle 3 = 180^0$ (Angles forming a straight line)

$\therefore \angle A + \angle B + \angle C = 180^0$

$\therefore$ The sum of the angles of a triangle is 180^0

12-B (i)

In $\triangle$ABC and $\triangle$PQR

AB = PQ = 3cm (side)   (2m)
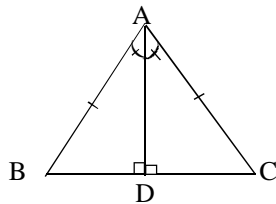
$\angle B = \angle Q = 120^0$ (angle)

BC = QR = 4cm (side)

By S.A.S Congruency criterion

$\triangle ABC \cong \triangle PQR$ (2m)

(ii)

In $\triangle ABD$ and $\triangle ACD$

AB = AC (given)

$\angle BAD = \angle CAD$ (given)

AD = AD (common)   (2m)

By S.A.S congruency criterion

$\triangle ABD \cong \angle ACD$ (2m)

[P.T.O]

13-A (i)

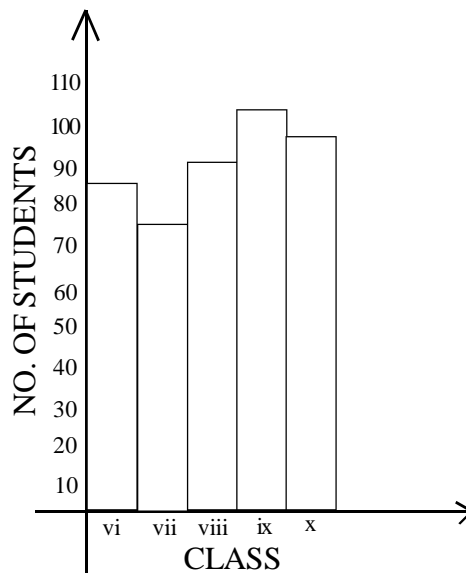| Class	No.of Students
VI	84
VII	72
VIII	96
IX	105
X	98

Scale:
On x-axis, 1cm = 1class
On y-axis, 1cm = 10units   (1m)

(ii)

. For each correct rectangle one mark (5x1 = 5m)
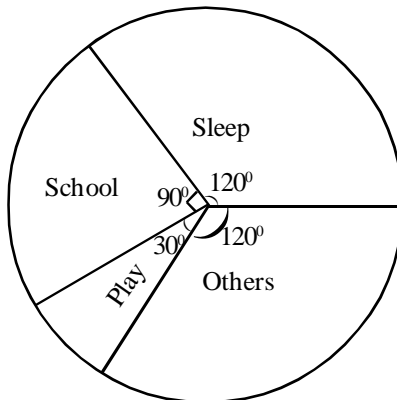. For Axis and marking numbers and classes (2m)

13-B (i) **PIE Diagram**

Time Spent for	Time Spent	Angle of sector
Sleep	8hrs	$\frac{8}{24} \times 360^0 = 120^0$
School	6hrs	$\frac{6}{24} \times 360^0 = 90^0$
Play	2hrs	$\frac{2}{24} \times 360^0 = 30^0$
Others	8hrs	$\frac{8}{24} \times 360^0 = 120^0$
Total	24hrs	360^0

For preparation of table (4m)

(ii)   for drawn diagram   (4m)

PART - B
SECTION - IV

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