SET - I

SUMMATIVE ASSESSMENT - II - 2016 - 2017

MATHEMATICS

(English Medium)

Class : IX(P-2) **(Max. Marks : 40)**

PART - A

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

1.

$\angle COD = \angle AOB = 90^0$ $(\therefore AB = CD)$

$\angle OCD = \angle ODC = X^0$ $(\therefore OC = OD)$

$\angle OCD + \angle ODC + 90^0 = 180^0$

$X + X = 180^0 - 90^0$

$2X = 90^0$

$X = \frac{90}{2} = 45^0$

$\angle OCD = X = 45^0$

2. Given Inclusive classes : 10-19, 20-29, 30-39, 40-49

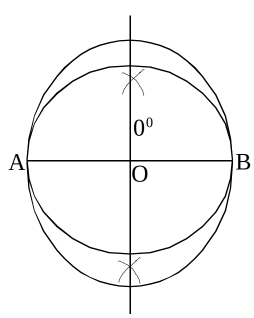
$\frac{10-9}{2} = \frac{1}{2} = 0.5$

Exclusive classes : 9.5-19.5 , 19.5-29.5 , 29.5-39.5, 39.5-49.5

3. Table with suitable units

S.No	Dimension	Area Units
1	mm	Square m.m (m.m^2)
2	cm	cm^2
3	m	m^2
4	km	km^2

4.



SECTION - II **5x4 = 20**

5.

$3x - 17 + 2x + 5 + x = 180^0$ (straight angle)

$6x - 12 = 180^0$

$6x = 180^0 + 12$

$6x = 192$

$x = \frac{192}{6} = 32^0$

$\angle AOP = 3x - 17 = 3\times 32 - 17 = 96 - 17 = 79^0$

$\angle AOQ = 3x - 17 + 2x + 5 = 5x - 12 = 5x32 - 12$

$= 160 - 12$

$= 148^0$

6.

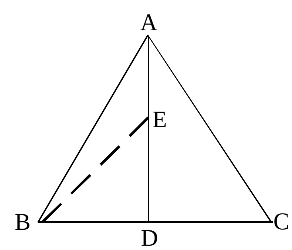
Marks	No. of Students	C.F
5	2	2
10	6	8
15	18	26
20	10	36
25	9	45
30	8	53

(i) Median Class = $\frac{53+1}{2} = \frac{54}{2} = 27^{th}$ observation

Median = 20

(ii) Mode = 15 ($\therefore$ Highest frequency)

7. Given : In Δ ABC, D and E are the midpoints of BC and AD respectively



RTP : Area of Δ ABC = 4 X Area of Δ ABE

Proof : In Δ ABC

AD is the median, If divides the triangle into equal triangles

Area of Δ ADB = Area of Δ ADC = $\frac{1}{2}\Delta$ ABC $\rightarrow (1)$

In Δ ADB, BE is Median

$\therefore$ Area of Δ ABE = $\frac{1}{2}$ Area of Δ ABD $\rightarrow (2)$

From (1) and (2)

Area of Δ ABE = $\frac{1}{4}$ Area of Δ ABC

= Area of Δ ABC = 4 x Area of Δ ABE

8. (i) Area of a triangle = $\frac{1}{2}bh$

(ii) Area of a Rhombus = $\frac{1}{2}d_1d_2$

9. BD = 4cm

AC = BD = 4cm ($\because$ ABCD is a square)

Diagonals are equal in square

Radius = r = 4cms

Area of circle =

$$= \pi r^2$$

$$= \pi \times 4 \times 4$$

$$= \pi \times 16$$

Area of circle $= 16\pi$

$$\frac{d2}{2} sq.units$$

Area of a square = $= \frac{4^2}{2}$

$$= \frac{16}{2} = 8 sq.cm$$

Ratio of Area of the circle and area of a square = $16\pi : 8 = 2\pi : 1$

10-A

No. of centuries	No.of crickers	di=x_i-A	$f_i d_i$
25	10	10	100
20	22	5	110
15	18	0	0
10	24	-5	-120
5	46	-10	-460
	$\sum f_i = 120$		$\sum f_i d_i - 370$

10-B Suppose, we assume $A = 15$

Mean = $A + \frac{\sum f_i d_i}{\sum f_i}$

Mean = $15 + \frac{-370}{120}$

= 15- 3.08

Mean = 11.92

11-A

$PQ \perp PS, PQ//SR$

$\angle SQR = 28^0$ and $\angle QRT = 65^0$

In a triangle exterior angle $(\angle QRT)$ is the sum of two opposit interior angles

$\angle QRT = \angle SQR + \angle QSR$

$65^0 = 28^0 + \angle QSR$

$\therefore \angle QSR = 65^0 - 28^0 = 37^0$

(i) PQ//SR is given

$\angle x = \angle QSR$(Alternate angle)

$x^0 = 37^0$

(ii) PQ PS is given

$x+y = 90^0$

$37^0+y = 90^0$

$y = 90^0-37^0$

$y = 53^0$

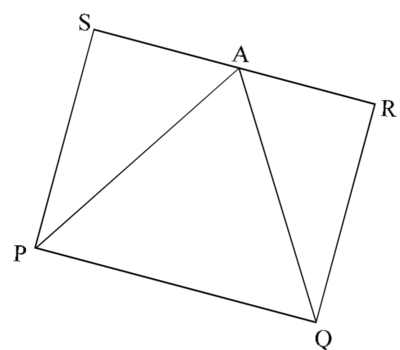
$\therefore$ $x = 37^0$ and $y = 53^0$

12-A Given

$$\frac{a+b+c}{3} = 42$$
$$a+b+c = 126$$
$$60+48+c = 126$$
$$= 126+108$$
$$c = 18$$

Marks obtained by the Latha = 18
Substituting, b=48,c=18 in (1), we get
48+18+d = 132
66+d = 132
d=132-66
d=66
Marks obtained by Sravani, d = 66
$\therefore$ Marks obtained by Sai, Raju, Latha, Sravani are 60+,48,18,66 respectively

12-B From the figure
Δ APQ, Δ PQRS are on the same base PQ and beween the same parallel lines PQ and RS



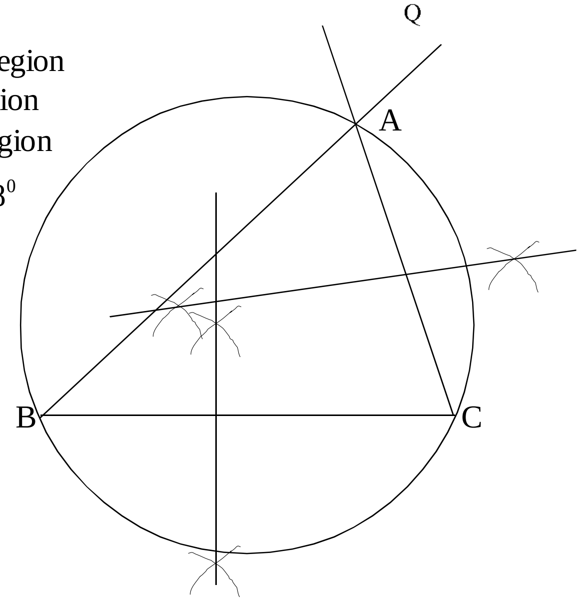
$\therefore \Delta$ APQ = $\frac{1}{2} \square$ PQRS

$\square$ PQRS - Δ APQ = $\frac{1}{2} \square$ PQRS

$\frac{1}{2} \square$ PQRS = Δ ASP + Δ ARQ

The farmer may sow groundnuts on APQ region
The farmer may sow pulses on Δ ASP region
The farmer may sow Paddy on Δ ARQ region

13-A In Δ ABC, BC=6cm, $\angle A = 52^0, \angle B = 48^0$



$$\angle A + \angle B + 180^0$$
$$52^0 + 48^0 + \angle C = 180^0$$
$$100^0 + \angle C = 180^0$$
$$\angle C = 180^0 - 100^0$$
$$\angle C = 80^0$$

13-B Highest score = 475

Lowest score = 209

Range = Highest score = Lowest score

Clas size = 50

No. of Classes = $\frac{266}{50} = 5.32$

Classes	Tally Marks	Frequency
200-250	I I I I	4
250-300	~~I I I I~~ I I I	8
300-350	~~I I I I~~ I	6
350-400	I I I I	4
400-450	~~I I I I~~ I I	7
450-500	~~I I I I~~ I	6
	Total	35

PART - B

SECTION - IV

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