

25:09:22

MARKS: 80

- 1)  $\sqrt{6} \times \sqrt{8} = \sqrt{48}$  (1 mark each)  
 $= 4\sqrt{3} - B\checkmark$
- 2)  $(3, 0) - A\checkmark$
- 3)  $3b = 120 \Rightarrow b = 40 - D\checkmark$
- 4)  $\frac{\sqrt{3}}{4} (8)^2 = 16\sqrt{3} - C\checkmark$
- 5)  $70 - 80 - B\checkmark$
- 6)  $13 - B\checkmark$
- 7) (1 mark each)  
 $\frac{1}{\sqrt{45}} = \frac{1}{3\sqrt{5}} \therefore \text{Rationalising factor} = \sqrt{5}$   
(OR)  $\frac{1}{\sqrt{45}} = \frac{1}{3\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{5}}{15}$  (1)  $\checkmark$
- 8)  $\sqrt{80} - \sqrt{20} = 4\sqrt{5} - 2\sqrt{5} = 2\sqrt{5}$  (1)  $\checkmark$
- 9)  $\frac{9}{20} = 0.45$  (1/2)  $\checkmark$   
 $= \text{Terminating (Rational No.)}$  (1/2)  $\checkmark$
- 10)  $x = 0.8333 \dots$   
 $10x = 8.333 \dots$   
 $100x = 83.333 \dots$  (1/2)  $\checkmark$   
 $100x - 10x = (83.33 \dots) - (8.33 \dots)$   
 $90 = 75$   
 $x = \frac{75}{90} = \frac{5}{6}$  (1/2)  $\checkmark$
- 11)  $\frac{\sqrt{3}}{4} a^2 = 100\sqrt{3} \Rightarrow a^2 = 100 \times 4$   
 $\Rightarrow a = 20 \rightarrow (1/2) \checkmark$
- 12)  $3x + 5x + 7x = 300 \text{ m}$   
 $15x = 300 \Rightarrow x = 20 \rightarrow (1/2) \checkmark$   
 $\therefore \text{The sides are } 60, 100, 140 \text{ m}$  (1/2)  $\checkmark$   
(OR)  
 $\text{Area} = \frac{1}{2} \times b \times h = \frac{1}{2} \times 4 \times 4 = 8 \text{ cm}^2$  (1)  $\checkmark$

- 12)  $h = 21 \text{ cm}, b = 28 \text{ cm}$   
 $\text{Area} = \frac{1}{2} \times 21 \times 28$   
 $= 294 \text{ cm}^2$  (1)  $\checkmark$
- 13) Things which are double of the same things are equal to one another (1)  $\checkmark$
- 14)  $145.5 - 135.5 = 10$  (1)  $\checkmark$
- 15)  $AM = AM$   
 $PM = QM$  SAS Congruency (1/2)  $\checkmark$   
 $\angle AMP = \angle PMQ$  (OR) (1/2)  $\checkmark$
- $BC = QR$  ASA (1)  $\checkmark$   
 $AB = PQ$  AAS (1)  $\checkmark$
- 16)  $\text{Range} = 98 - 3 = 95$  (1)  $\checkmark$
- 17)  $\text{Class mark} = 25$   
 $\Rightarrow \text{C.I} = 20 - 30$  (1)  $\checkmark$   
(OR)  
 $10 - 14, 14 - 18, \dots, 30 - 34$  (1/2)  $\checkmark$   
 $(34)$  (1/2)  $\checkmark$
- 18)  $130^\circ - 2x + 3x = 180^\circ$  (1/2)  $\checkmark$   
 $x = 180 - 130 = 50^\circ$  (1/2)  $\checkmark$
- 19)  $\angle PBQ = 180^\circ - 95^\circ = 85^\circ$  (1)  $\checkmark$
- 20)  $30 - a + 125 + 2a = 180$  (1/2)  $\checkmark$   
 $155 + a = 180 \Rightarrow a = 25$  (1/2)  $\checkmark$
- 21)  $\perp r$  to y axis — 9 (1)  $\checkmark$   
(OR)  
III and IV Quadrant (1)  $\checkmark$
- 22)  $A(5, 0) B(5, 3) C(-2, 4)$  (1)  $\checkmark$



23)  $(216)^{2/3} - (256)^{1/4}$  SEC-B  
 $(6^3)^{2/3} - (4^4)^{1/4}$   $(1/2 + 1/2)$   
 $6^2 - 4 = 36 - 4 = 32$   $(1)$   
 (OR)

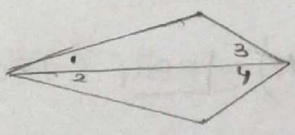
$\frac{1}{\sqrt{2}} + \pi \Rightarrow \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2} + \pi$   $(1/2)$

$\frac{1.414}{2} + 3.141 = 0.707 + 3.141$   $(1)$   
 $= 3.848$   $(1/2)$

24)  $8 + 11 + a = \text{Peri}$   
 $19 + a = 32 \Rightarrow a = 13$   
 $s = \frac{32}{2} = 16$   $(1/2)$   
 $\text{Area} = \sqrt{16(16-8)(16-11)(16-13)}$   $(1/2)$   
 $= \sqrt{16 \times 8 \times 5 \times 3}$   
 $= \sqrt{8 \times 2 \times 8 \times 5 \times 3} = 8\sqrt{30} \text{ m}^2$   $(1)$

25) i)  $15 - 30 \text{ mts} = 35 + 44 + 52$   
 $= 131$   $(1)$   
 ii) Team A with 52 scores.  $(1)$

26)  $OA = OB$   
 $OC = OD$   
 $\angle AOC = \angle DOB \rightarrow \text{SAS}$   $(1)$   
 i)  $\triangle AOC \cong \triangle DOB$   $(1/2)$   
 ii) Yes  $AC = BD$  by C.P.C.T.  $(1/2)$   
 (OR)



$AC = AC$   
 $\angle 1 = \angle 2$   
 $\angle 3 = \angle 4 \rightarrow \text{ASA}$   $(1)$   
 i)  $\triangle BAC \cong \triangle DAC$   $(1/2)$   
 ii) Yes  $AD = AB$  by C.P.C.T.  $(1/2)$

27)  $x = 30^\circ$ ,  $TU = 4 \text{ cm}$   $(1/2)$   
 $LP = LS$ ;  $PQ = ST$ ,  $PR = SU$   
 $(1/2)$

28 I  $\rightarrow 8 - B$   
 II  $\rightarrow 6 \text{ foot} - A$   $\checkmark$   
 III  $\rightarrow \frac{1}{2} \times 6 \times 6 = 18 - D$   $\checkmark$   
 IV  $\rightarrow 2 - B$   $\checkmark$   
 V  $\rightarrow A \text{ and } C - C$   $\checkmark$   
 (1 mark each)

29. I  $\rightarrow 2y + 2y + 5y = 180$   
 $9y = 180 \Rightarrow y = 20$   $\checkmark$   
 II  $\rightarrow 40 - B$   $\checkmark$   
 III  $\rightarrow \angle EOB - A$   $\checkmark$   
 IV  $360 - 100 = 260$   $\checkmark$   
 V  $2:5:2 - A$   $\checkmark$

30)  $1:2:2$   
 $x + 2x + 2x = 200$   
 $5x = 200 \Rightarrow x = \frac{200}{5} = 40$   
 $a = 40, b = 80, c = 80$   $(1)$   
 $\text{Area} = \sqrt{100(100-40)(100-80)(100-80)}$   $1$   
 $= \sqrt{100 \times 60 \times 20 \times 20}$   
 $= 400\sqrt{15} \text{ m}^2$   $1$   $(X)$   
 $\text{Cost} = 400 \times \sqrt{15} \times 8$   
 $\text{Rs } 3200\sqrt{15}$   $(1)$   
 in symbol

31) (i)  $(15 + \sqrt{11})(15 - \sqrt{11})$   
 $= (15)^2 - (\sqrt{11})^2 = 225 - 11$   
 $= 214$   $(1/2)$   
 (ii) a)  $(\sqrt{5} + \sqrt{2})^2$   
 $= 5 + 2\sqrt{10} + 2 = 7 + 2\sqrt{10}$   $(1/2)$   
 b)  $17\sqrt{10} + 19\sqrt{6}$   $(1)$   $\checkmark$

32) Vertically opp. angles  
 Given, To prove, Diagram  $(1/2)$   
 Proof  $(1/2)$   $\checkmark$

33) skill level question - use of instrument is must  
 No. line  $(1)$   $\checkmark$   
 $\sqrt{2}$  Representation  $(1)$   $\checkmark$   
 $\sqrt{3}$  Representation  $(1)$   $\checkmark$

(OR)  
 $x = \sqrt{7} - \sqrt{6}$ ;  $\frac{1}{x} = \frac{1}{\sqrt{7} - \sqrt{6}} \times \frac{\sqrt{7} + \sqrt{6}}{\sqrt{7} + \sqrt{6}}$   
 $= \frac{\sqrt{7} + \sqrt{6}}{7 - 6} = \sqrt{7} + \sqrt{6}$   $1$   $(X)$   
 $(x + \frac{1}{x})^2 = (\sqrt{7} - \sqrt{6} + \sqrt{7} + \sqrt{6})^2 = (2\sqrt{7})^2 = 28$   $(1)$   $\checkmark$



34) Any three Euclid's Axioms. one mark each (3) ✓

35) Given  $BC = QR$

$$BC + CR = CR + QR \text{ (Axiom)}$$

Proof:  $BR = QC$

$$\angle B = \angle Q = 90^\circ \text{ (gn)}$$

$$AB = PQ \text{ (gn)} \text{ --- (2) ✓}$$

(ii) By ASA  $\triangle ABR \cong \triangle PQC$  (1/2) ✓

(iii) Yes  $AR = PC$  by C.P.C.T (1/2) ✓

Sec-C

$$36) \frac{5 + \sqrt{3}}{7 + \sqrt{3}} \times \frac{7 - \sqrt{3}}{7 - \sqrt{3}} \quad 1$$

$$\frac{5(7 - \sqrt{3}) + \sqrt{3}(7 - \sqrt{3})}{(7)^2 - (\sqrt{3})^2} \quad 1 \text{ (X) ✓}$$

$$= \frac{35 - 5\sqrt{3} + 7\sqrt{3} - 3}{49 - 3}$$

$$= \frac{32 + 2\sqrt{3}}{46} = \frac{32}{46} + \frac{2}{46} \sqrt{3}$$

$$= \frac{16}{23} + \frac{1}{23} \sqrt{3} \quad 1 \text{ (X) ✓}$$

ii)  $\frac{6^2 \sqrt{32}}{8 \sqrt{8}} = 2 \times 2 = 4 \text{ --- (1) ✓}$

37) i) Graph --- (3) ✓

ii)  $(0, 2)$  --- (1) ✓

iii)  $2(l+b) = 2(5+6)$   
 $= 2(11) = 22 \text{ units.}$   
 --- (1) ✓

38)  $\angle ABE = \frac{1}{2} \angle ABQ$

$$\angle BCG = \frac{1}{2} \angle BCS$$

$$\angle ABE = \angle BCG \text{ Each (1/2 mark)}$$

$$\frac{1}{2} \angle ABQ = \frac{1}{2} \angle BCS$$

$$\therefore \angle ABQ = \angle BCS.$$

(OR)

$$x = 50^\circ (90 - 40) \text{ --- (1) ✓}$$

$$70 + y = 180 \text{ (Linear pair) --- (1) ✓}$$

$$y = 110^\circ$$

$$z = 40^\circ \text{ (Alternate angles) --- (1) ✓}$$

$$\angle DCE = \angle DFE = 70^\circ \text{ (Corresponding angles) ✓ --- (1)}$$

$$\angle BCD = \angle BCE - \angle DCE$$

$$= 140^\circ - 70^\circ = 70^\circ \text{ --- ✓ --- (1)}$$

scale is must

145-155 ..... 195-205

Histogram --- ✓ 3

mid point is must

Frequency polygon --- ✓ 2.

1. Sheena - 1 to 16 = 16 marks
2. Arsha - 17 to 27 = 16 marks
3. Sunitha - 28 to 31 = 16 marks
4. Shiji - 32 to 35 = 12 marks
5. Sharol - 36 to 39 = 20 marks