| MARKING SCHEME BSEH PRACTICE PAPER 1, 9TH MATHS , March2025 (HINDI MEDIUM) | | |
|---|---|---|
| **Q. no.** | **Expected solutions** | **marks** |
| | **Section-A** | |
| 1 | (c) $\sqrt{9}$ | 1 |
| 2 | (B) 40° | 1 |
| 3 | (c) SSA | 1 |
| 4 | (D) 3.4 cm | 1 |
| 5 | (A) 75° | 1 |
| 6 | T | 1 |
| 7 | (A) 24 $cm^2$ | 1 |
| 8 | C) आधा | 1 |
| 9 | (A) 137.5 | 1 |
| 10 | (D) 2 | 1 |
| 11 | (D) 7 | 1 |
| 12 | (B) 3 | 1 |
| 13 | (A) - 6 | 1 |
| 14 | (B) $\pi r(l+\frac{r}{4})$ | 1 |
| 15 | (A) 65° | 1 |
| 16 | $360^0$ | 1 |
| 17 | (B) 50° | 1 |
| 18 | 90° | 1 |
| 19 | D) A असत्य है लेकिन R सत्य है | 1 |
| 20 | B) A और R दोनों सत्य हैं लेकिन R, A की सही व्याख्या नहीं है। | 1 |
| | **SECTION-B** | |
| 21. | हम जानते हैं कि 5+1=6<br>$\frac{3}{5}=\frac{3}{5}\times\frac{6}{6}=\frac{18}{30}$ और $\frac{4}{5}=\frac{4}{5}\times\frac{6}{6}=\frac{24}{30}$<br>.....<br>पांच परिमेय संख्याएँ = $\frac{19}{30},\frac{20}{30},\frac{21}{30},\frac{22}{30},\frac{23}{30}$ | 1<br>1 |
| 22. | $(3\sqrt{5}-5\sqrt{2})(4\sqrt{5}+3\sqrt{2})$<br>$3\sqrt{5}(4\sqrt{5}+3\sqrt{2})-5\sqrt{2}(4\sqrt{5}+3\sqrt{2})$<br>..... | 1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | $60+9\sqrt{10}-20\sqrt{10}-30$<br>$30-11\sqrt{10}$<br>OR<br>.....<br>$(7)^{\frac{1}{3}} \times (8)^{\frac{1}{3}}$<br>$(7X8)^{\frac{1}{3}}$<br>.....<br>$(56)^{\frac{1}{3}}$ | 1<br><br>1<br><br>1 |
| 23. | $\frac{1}{7+3\sqrt{2}} \times \frac{7-3\sqrt{2}}{7-3\sqrt{2}}$<br>$=\frac{7-3\sqrt{2}}{(7-3\sqrt{2})(7+3\sqrt{2})}$<br>.....<br>$\frac{7-3\sqrt{2}}{49-18}$<br>$=\frac{7-3\sqrt{2}}{31}$ | 1<br><br>1 |
| 24. | $104 \times 97$<br>$104\times97= (100+4) \times (100-3)$<br>यहाँ, $x = 100$ , $a = 4$ , $b = -3$<br>सर्वसमिका , $(x+a)\ (x+b) = x^2 + (a+b)\ x + ab$ द्वारा<br>.....<br>$= (100)^2+(4-3)100+(4\times-3)$<br>$= 10000+100-12$<br>$= 10088$ | 1<br><br>1 |
| 25. | यदि $x-2$, $p(x)$ का एक गुणनखंड है तो $P(2) = 0$<br>गुणनखंड प्रमेय द्वारा<br>$p(2) = 4(2)^3 -3(2)^2- 4(2)+3k=0$<br>..... | 1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | $= 32-12-8+3k=0$<br>$=12+3k=0$<br>$3k= -12$<br>$K= - 4$<br>.....OR.....<br><br>x-3 =0 लेने पर x = 3<br><br>x=3 बहुपद में रखने पर $(3)^3-4(3)^2+3+6$<br><br>.....<br><br>= 27-36+3+6= 0<br><br>अतः गुणनखंड प्रमेय द्वारा x-3, बहुपद $x^3-4x^2+x+6$ का एक गुणनखंड है। | 1<br><br>1<br><br>1 |
| | | |
| | **SECTION-C** | |
| 26. | y, x के अनुक्रमानुपाती है<br>$\therefore$ $y \propto x$<br>$\Rightarrow$ y = kx<br>.....<br>y=12 रखने पर जब x=4 है<br>12=4k<br>$\Rightarrow$ k=3<br>.....<br>इसलिए y=3x<br>x=5 रखने पर y=3x5=15 | 1<br><br>1<br><br>1 |
| 27. | कैप्सूल का व्यास = 3.5 mm<br>कैप्सूल की त्रिज्या = $\frac{3.5}{2}$ mm<br>.....<br><br>कैप्सूल में दवा का आयतन = $\frac{4}{3}\pi r^3$<br><br>..... | 1<br><br>1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | . <br> $= \frac{4}{3} \times \frac{22}{7} \times \frac{3.5}{2} \times \frac{3.5}{2} \times \frac{3.5}{2}$ <br> $= 22.46$ मिमी$^2$ <br> .....OR..... <br> माना चंद्रमा की त्रिज्या = r <br> माना पृथ्वी की त्रिज्या = 4r <br> ..... <br> . <br> $\frac{\text{चंद्रमा का पृष्ठीय क्षेत्रफल}}{\text{पृथ्वी का पृष्ठीय क्षेत्रफल}} = \frac{4\pi r^2}{4\pi(4r)^2}$ <br> ..... <br> $= \frac{4\pi r^2}{64\pi r^2}$ <br> $= \frac{1}{16} = 1:16$ | 1 <br> 1 <br> 1 <br> 1 |
| 28. | The expression $64m^3 - 343n^3$ can be written as $(4m)^3-(7n)^3$ <br> $64m^3 - 343n^3 = (4m)^3-(7n)^3$ <br> ..... <br> We know that, $x^3-y^3 = (x-y)(x^2+xy+y^2)$ <br> $= (4m-7n)[(4m)^2+(4m)(7n)+(7n)^2$ <br> ..... <br> . <br> $= (4m-7n)(16m^2+28mn+49n^2)$ | 1 <br> 1 <br> 1 |
| 29. | $2x + 3y = 12$ | |

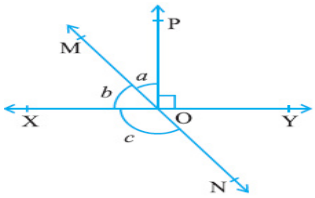
Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | X=0 रखने पर 2x0 + 3xY = 12<br>3Y = 12<br>Y=4<br>(i) पहला हल (0,4)<br>.....<br>X=1 रखने पर 2x1+ 3xY = 12<br>3Y=10<br>$Y=\frac{10}{3}$<br>(ii) दूसरा हल $(1, \frac{10}{3})$<br>.....<br>X=2 रखने पर 2x2 + 3Y= 12<br>3Y= 8<br>$Y=\frac{8}{3}$<br>(iii) तीसरा हल $(2, \frac{8}{3})$ | 1<br><br>1<br><br>1 |
| 30. | माना x = $0.2\overline{35}$ = 0.2353535..... (i)<br>(i) को 10 से दोनों तरफ गुणा करने पर<br>10x = 2.353535..... (ii)<br>.....<br>(ii) को दोनों तरफ 100 से गुणा करने पर<br>1000x = 235.353535..... (iii)<br>.....<br>(iii) - (ii) करने पर<br>990x = 233.0000<br>$x = \frac{233}{990}$ | 1<br><br>1<br><br>1 |
| 31. | The expression, $8X^3 + 27Y^3 + 36X^2Y + 54XY^2$<br>can be written as $(2X)^3 + (3Y)^3 + 3(2X)^2(3Y) + 3(2X)(3Y)^2$<br>..... | 1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | $=(2X)^3 + (3Y)^3 + 3(2X)^2(3Y) + 3(2X)(3Y)^2$<br>**सर्वसमिका द्वारा** $(x+y)^3 = x^3 + y^3 + 3xy\,(x+y)$<br>.....<br>$=(2X)^3 + (3Y)^3 + 3(2X)(3Y)(2X+3Y)$<br>$=(2X+3Y)^3$<br>$=(2X+3Y)\,(2X+3Y)\,(2X+3Y)$ | 1<br><br>1 |
| | OR | |
| 31. | $8X^3 + Y^3 + 27Z^3 - 18XYZ$ को<br>इस प्रकार लिख सकते है $(2X)^3 + Y^3 + (3Z)^3 - 3(2X)(Y)(3Z)$<br>.....<br>**सर्वसमिका द्वारा** $x^3 + y^3 + z^3 - 3xyz = (x+y+z)(x^2+y^2+z^2-xy-yz-zx)$<br>$=(2X+Y+3Z)((2X)^2 + Y^2 + (3Z)^2 - 2XY - Y(3Z) - 3Z(2X))$<br>.....<br>$(2X+Y+3Z)(4X^2 + Y^2 + 9Z^2 - 2XY - 3YZ - 6ZX)$ | 1<br><br>1<br><br>1 |
| | | |
| | **SECTION-D** | |
| 32. | माना एक रेखाखण्ड AB के दो मध्य बिन्दु C तथा C' हैं ।<br>.....<br>यदि C, रेखाखण्ड AB का मध्य बिन्दु है ।<br>तो , AC=BC<br>$\Rightarrow$ AC = $\frac{1}{2}$AB .....(i)<br>.....<br>माना C' , रेखाखण्ड AB का मध्य बिन्दु है ।<br>इसलिए , AC'=BC'<br>$\Rightarrow$ AC' = $\frac{1}{2}$AB .....(ii) | 1<br><br>1<br><br>1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | .....<br>समीकरण (i) व (ii) से<br>AC=AC'<br>.....<br>⇒ C=C'<br>इसलिए C व C' एक ही बिंदु है अर्थात संपाती है ।<br>अतः एक रेखाखण्ड का एक ही मध्य बिंदु होता है । | 1<br><br>1 |
| 33 |  <br><br><u>दिया हुआ है</u> :- $a : b = 2 : 3$ तथा $\angle POY = 90°$<br>.....<br><u>ज्ञात करना है</u> :- a तथा b का मान ।<br>.....<br><u>हल</u> :- $a : b = 2 : 3$ मान लीजिए a =2x और b =3x है<br>हम जानते हैं कि रैखिक युग्मों का योग हमेशा $180°$ के बराबर होता है<br>इसलिए, $\angle POY + a + b = 180°$<br>जैसा कि प्रश्न में दिया गया है $\angle POY = 90°$ का मान रखने पर,<br>$a+b = 90°$<br>.....<br>$\therefore\ 2x+3x = 90°$ इसे हल करने पर हमें प्राप्त होता है<br>$5x = 90°$<br>So, $x = 18°$<br>$\therefore a = 2\times18° = 36°$ | 1<br><br>1<br><br>1<br><br>1 |

Downloaded from www.cclchapter.com

$b = 3\times18° = 54°$

.....

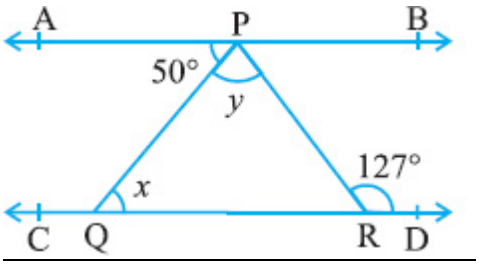
आरेख से, b+c भी एक सीधी रेखा पर कोण बनाता है,

इसलिए, $b+c = 180°$

$c+54° = 180°$ 1

$\therefore c = 126°$

.....OR.....




1

<u>दिया हुआ है</u> :- AB II CD , $\angle APQ = 50°$ तथा $\angle APR = 127°$

.....

<u>ज्ञात करना है</u> :- x तथा y का मान 1

.....

<u>हल</u> :- AB II CD तथा PQ एक तिर्यक रेखा है ( दिया हुआ है )

इसलिए, $\angle APQ=\angle PQR$ ( अंतः एकांतर कोण )

$\angle APQ = 50°$ और $\angle PQR = x$ का मान रखने पर 1

$x = 50°$

.....

$\angle APR = \angle PRD$ (अंतःएकांतर कोण)

1

$\angle APR = 127°$ ( क्योकि $\angle PRD = 127°$ दिया हुआ है )

.....

हम वह जानते हैं $\angle APR =\angle APQ+\angle QPR$

1

अब, $\angle QPR = y$ और $\angle APR = 127°$ का मान रखने पर,

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | हम पाते हैं $50° + y = 127°$<br>$\Rightarrow y = 77°$<br>$x = 50°$ और $y = 77°$ | |
| 34. | माना त्रिभुज की तीन भुजाएँ हैं 12x , 17x, 25x<br>अर्द्ध परिमाप (s) = $\frac{540}{2}$ = 270 सेमी<br>.....<br>$s = \frac{a+b+c}{2}$<br>$270 = \frac{12x+17x+25x}{2}$<br>54x= 540<br>x=10<br>.....<br>.<br>पहली भुजा = 12x10= 120 सेमी<br>दूसरी भुजा = 17x10 = 170 सेमी<br>तीसरी भुजा = 25x10 = 250 सेमी<br>.....<br>.<br>$\Delta$ का क्षेo $= \sqrt{s(s-a)(s-b)(s-c)}$<br>$= \sqrt{270(270-120)(270-170)(270-250)}$<br>.....<br>$= \sqrt{270(150)(100)(20)}$<br>= 9000 वर्ग सेमी<br>OR | 1<br>1<br>1<br>1<br>1 |
| 34. | शंक्वाकार टोपी की त्रिज्या (r) = 7 सेमी<br>शंक्वाकार टोपी की ऊंचाई (h) = 24 सेमी | 1 |

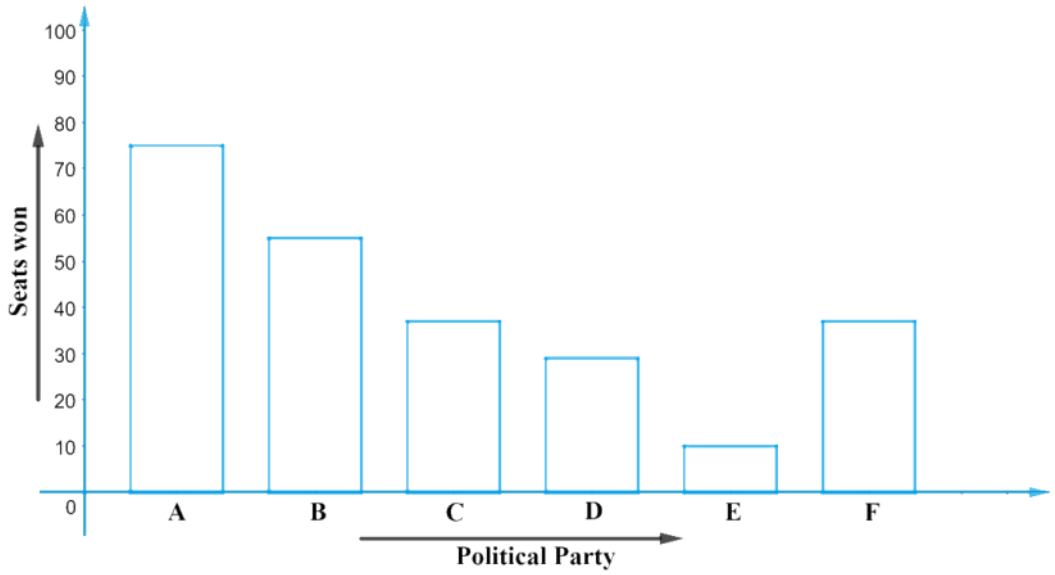
Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | .....<br>शंक्वाकार टोपी की तिर्यक ऊंचाई (L) = $\sqrt{(r)^2 + (h)^2}$<br>$= \sqrt{(7)^2 + (24)^2}$<br>$= \sqrt{49 + 576}$<br>$= \sqrt{625}$<br>= 25 सेमी<br>.....<br>10 टोपियाँ बनाने के लिए आवश्यक शीट का क्षेत्रफल= 10 πrL<br>.....<br>$= 10 \times \frac{22}{7} \times 7 \times 25$<br>= 5500 वर्ग सेमी<br>.....<br>10 टोपियों का कुल मूल्य = 5500 x 0.35 = 1925 रु. | 1<br>1<br>1<br>1 |
| 35. | दिया गया है : AC = AD और रेखाखंड AB , ∠A को समद्विभाजित करती है।<br>.....<br>सिद्ध करना है : **ΔABC ≅ ΔABD**<br>.....<br>**प्रमाण:**<br>त्रिभुजों ΔABC और ΔABD में<br>(i) AC = AD ( दिया गया है)<br>(ii) AB = AB (उभयनिष्ठ)<br>(iii) ∠CAB = ∠DAB (क्योंकि AB कोण A का समद्विभाजक है)<br>..... | 1<br>1<br>1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | इसलिए, $\Delta ABC \cong \Delta ABD$. (SAS सर्वांगसमता कसौटी के अनुसार)<br>.....<br>प्रश्न के दूसरे भाग के लिए, BC =BD हैं। (C.P.C.T के नियम के अनुसार | 1<br><br>1 |
| | **SECTION-E** | |
| 36. | (i) त्रिभुज ABC की भुजाएँ क्रमशः 122 मीटर, 22 मीटर और 120 मीटर हैं<br>अब, परिमाप (122+22+120) = 264 मीटर होगा<br>.....<br>(ii) $\Delta$ का क्षेo = $\sqrt{s(s-a)(s-b)(s-c)}$ जहाँ s = (a+b+c)/2<br>.....<br>(i) अर्द्ध परिमाप (s) = 264/2 = 132 मी.<br>हीरोन के सूत्र का प्रयोग करने पर,<br>त्रिभुज का क्षेत्रफल = $\sqrt{s(s-a)(s-b)(s-c)}$<br>$=\sqrt{132(132-122)(132-22)(132-120)}$<br>$=\sqrt{132\times 10\times 110\times 12}$<br>$=1320\ m^2$<br>OR<br>हम जानते हैं कि प्रति वर्ष विज्ञापन का किराया = 5000 प्रति वर्ग मीटर<br>$\therefore$ एक दीवार का 3 महीने का किराया = रु. (1680×5000×3)/12<br>= रु. 2100000 | 1<br><br>1<br><br>2<br><br>2 |
| 37. | (i) राहुल तथा नीतू के बीच की दूरी = 2- (-2) = 4 इकाई<br>..... | 1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | (ii) अंकित (III) तीसरे चतुर्थांश में बैठा है । | 1 |
| | ..... | |
| | (iii) चार मित्रों के स्थानों को क्रम से मिलाने पर **<u>आयत</u>** की आकृति बनती है | 2 |
| | OR | |
| | (iii) लम्बाई = 8 इकाई चौड़ाई = 4 इकाई<br>क्षेत्रफल = 8X4 = 32 वर्ग इकाई | 2 |
| 38. | (i) राजनीतिक दल A ने सबसे अधिक सीटे जीती । | 1 |
| | ..... | |
| | (ii) राजनीतिक दल E ने सबसे कम सीटें जीतीं । | 1 |
| | ..... | |
| | (iii) दण्ड आलेख<br>  <br><br>(राजनीतिक दल ) | 2 |

Downloaded from www.cclchapter.com

| MARKING SCHEME BSEH PRACTICE PAPER 1, 9TH MATHS , March2025 (ENGLISH MEDIUM) | | |
|---|---|---|
| **Q. no.** | **Expected solutions** | **marks** |
| | **Section-A** | |
| 1 | (c) $\sqrt{9}$ | 1 |
| 2 | (B) 40° | 1 |
| 3 | (c) SSA | 1 |
| 4 | (D) 3.4 cm | 1 |
| 5 | (A) 75° | 1 |
| 6 | T | 1 |
| 7 | (A) 24 $cm^2$ | 1 |
| 8 | C) Halved | 1 |
| 9 | (A) 137.5 | 1 |
| 10 | (D) 2 | 1 |
| 11 | (c) 2 | 1 |
| 12 | (B) 3 | 1 |
| 13 | (A) - 6 | 1 |
| 14 | (B) $\pi r(l+\frac{r}{4})$ | 1 |
| 15 | (A) 65° | 1 |
| 16 | $360^0$ | 1 |
| 17 | (B) 50° | 1 |
| 18 | 90° | 1 |
| 19 | D) A is false but R is true | 1 |
| 20 | B) Both A and R are true but R is not the correct explanation of A. | 1 |
| | **SECTION-B** | |
| 21. | We know that 5+1=6<br>$\frac{3}{5} = \frac{3}{5} \times \frac{6}{6} = \frac{18}{30}$ And $\frac{4}{5} = \frac{4}{5} \times \frac{6}{6} = \frac{24}{30}$<br>.....<br>Five RATonALNumbers = $\frac{19}{30}, \frac{20}{30}, \frac{21}{30}, \frac{22}{30}, \frac{23}{30}$ | 1<br>1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| 22. | $(3\sqrt{5} - 5\sqrt{2})(4\sqrt{5} + 3\sqrt{2})$<br>$3\sqrt{5}(4\sqrt{5} + 3\sqrt{2}) - 5\sqrt{2}(4\sqrt{5} + 3\sqrt{2})$<br>.....<br>$60+9\sqrt{10}-20\sqrt{10}-30$<br>$30-11\sqrt{10}$<br>OR<br>.....<br>$(7)^{\frac{1}{3}} \times (8)^{\frac{1}{3}}$<br>$(7X8)^{\frac{1}{3}}$<br>.....<br>$(56)^{\frac{1}{3}}$ | 1<br>1<br>1<br>1 |
| 23. | $\frac{1}{7+3\sqrt{2}} X \frac{7-3\sqrt{2}}{7-3\sqrt{2}}$ Rationalizing the denominator<br>$=\frac{7-3\sqrt{2}}{(7-3\sqrt{2})(7+3\sqrt{2})}$<br>.....<br>$\frac{7-3\sqrt{2}}{49-18}$<br>$= \frac{7-3\sqrt{2}}{31}$ | 1<br>1 |
| 24. | $104 \times 97$<br>$104\times97= (100+4) \times (100-3)$<br>Here, $x = 100$ , $a = 4$ , $b = -3$<br>By using identity , $(x+a)\ (x+b) = x^2 + (a+b)\ x + ab$<br>.....<br>$= (100)^2+(4-3)100+(4\times-3)$<br>$= 10000+100-12$<br>$= 10088$ | 1<br>1 |
| 25. | If $x - 2$ is a factor of $p(x)$, then $P(2) = 0$<br>By factor theorem | 1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | $p(2) = 4(2)^3 - 3(2)^2 - 4(2) + 3k = 0$<br>.....<br>$= 32-12-8+3k=0$<br>$=12+3k=0$<br>$3k= -12$<br>$K= -4$<br>.....OR.....<br>By putting $x-3=0$ we get $x = 3$<br><br>By substituting $x=3$ in polynomial we get $(3)^3-4(3)^2+3+6$<br>.....<br>$= 27-36+3+6= 0$<br><br>Hence by factor theorem x-3 is a factor of polynomial $x^3-4x^2+x+6$ | 1<br><br>1<br><br>1 |
| | | |
| **SECTION-C** | | |
| 26. | Since y is proportional to x given<br>$\therefore$ $y \propto x$<br>$\Rightarrow$ $y = kx$ .....(I)<br>.....<br>We put $y=12$ when $x=4$<br>$12=4k$<br>$\Rightarrow$ $k=3$<br>.....<br>By using $k=3$ in (i) we get $y=3x$<br>when we put $x=5$ we get $y=3x5=15$ | 1<br><br>1<br><br>1 |
| 27. | Diameter of capsule = 3.5 mm<br>Radius of capsule $= \frac{3.5}{2}$ mm<br>.....<br>Volume of medicine in capsule $= \frac{4}{3}\pi r^3$<br>.....<br>$= \frac{4}{3} \times \frac{22}{7} \times \frac{3.5}{2} \times \frac{3.5}{2} \times \frac{3.5}{2}$<br>$= 22.46$ $mm^2$ | 1<br><br>1<br><br>1 |

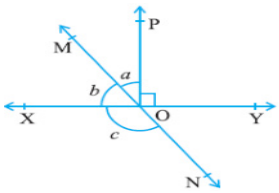
Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | .....OR..... <br> Let radius of Moon = r <br> Let radius of earth = 4r <br> ..... <br> . <br> $\frac{Surface\ area\ of\ Moon}{Surface\ area\ of\ Earth} = \frac{4\pi r^2}{4\pi(4r)^2}$ <br> ..... <br> $= \frac{4\pi r^2}{64\pi r^2}$ <br> $= \frac{1}{16} = 1:16$ | 1 <br> 1 <br> 1 |
| 28. | The expression $64m^3 - 343n^3$ can be written as $(4m)^3-(7n)^3$ <br> $64m^3 - 343n^3 = (4m)^3-(7n)^3$ <br> ..... <br> We know that, $x^3-y^3 = (x-y)(x^2+xy+y^2)$ <br> $= (4m-7n)[(4m)^2+(4m)(7n)+(7n)^2$ <br> ..... <br> $= (4m-7n)(16m^2+28mn+49n^2)$ | 1 <br> 1 <br> 1 |
| 29. | $2x + 3y = 12$ <br> By taking X=0 we get 2x0 + 3xY = 12 <br> 3Y = 12 <br> Y=4 <br> (i) First Solution (0,4) <br> ..... <br> By taking X=1 we get 2x1+ 3xY = 12 <br> 3Y=10 <br> $Y=\frac{10}{3}$ <br> (ii) Second solution $(1, \frac{10}{3})$ <br> ..... | 1 <br> 1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | By taking X=2 we get 2x2 + 3Y= 12<br>3Y= 8<br>Y= $\frac{8}{3}$<br>(iii) Third solution $(2, \frac{8}{3})$ | 1 |
| 30. | Let x = $0.2\overline{35}$ = 0.2353535…… (i)<br>Multiplying (i) by 10 on both sides<br>10x = 2.353535..... (ii)<br>.....<br>Multiplying (ii) by 100 on both sides<br>1000x = 235.353535..... (iii)<br>.....<br>By (iii) – (ii) we get<br>990x = 233.0000<br>x = $\frac{233}{990}$ | 1<br>1<br>1 |
| 31. | The expression, $8X^3 + 27Y^3 + 36X^2Y + 54XY^2$<br>can be written as $(2X)^3 + (3Y)^3 + 3(2X)^2(3Y) + 3(2X)(3Y)^2$<br>.....<br>$=(2X)^3 + (3Y)^3 + 3(2X)^2(3Y) + 3(2X)(3Y)^2$<br>**By using identity $(x + y)^3 = x^3 + y^3 + 3xy\,(x + y)$**<br>.....<br>$=(2X)^3 + (3Y)^3 + 3(2X)(3Y)(2X + 3Y)$<br>$=(2X+3Y)^3 = (2X+3Y)\,(2X+3Y)\,(2X+3Y)$ | 1<br>1<br>1 |
| | OR | |
| 31. | The expression $8X^3 + Y^3 + 27Z^3 - 18XYZ$<br>Can be written as $(2X)^3 + Y^3 + (3Z)^3 - 3(2X)(Y)(3Z)$<br>..... | 1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | $x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$<br>$=(2X+Y+3Z)((2X)^2 + Y^2 + (3Z)^2 - 2XY - Y(3Z) - 3Z(2X))$<br>.....<br>$(2X+Y+3Z)(4X^2 + Y^2 + 9Z^2 - 2XY - 3YZ - 6ZX)$ | 1<br><br>1 |
| | | |
| | **SECTION-D** | |
| 32. | Let there are two mid points C and C' of line AB<br>.....<br>If C is mid point of line AB<br>then , AC=BC<br>$\Rightarrow$ AC = $\frac{1}{2}$AB .....(i)<br>.....<br>If C' is mid point of line AB<br>then , AC'=BC'<br>$\Rightarrow$ AC' = $\frac{1}{2}$AB .....(ii)<br>.....<br>From (i) and (ii)<br>AC=AC'<br>.....<br>$\Rightarrow$ C=C'<br>Therefore C and C' are same point<br>Hence there is one and only one mid point of a line. | 1<br><br>1<br><br>1<br><br>1<br><br>1 |
| 33 |  <br><br><u>Given</u> :- a : b = 2 : 3 and ∠POY = 90°<br>.....<br><u>To Find</u> :- The value of a and b.<br><u>Solution</u> :- a : b = 2 : 3 Let a =2x and b =3x<br>We know that sum of angles of linear pair are 180° | 1<br><br>1 |

Downloaded from www.cclchapter.com

therefore, $\angle POY + a + b = 180°$

As given in question, by putting $\angle POY = 90°$ 1

$\Rightarrow$ $a+b = 90°$

.....

$\therefore 2x+3x = 90°$

$\Rightarrow 5x = 90°$

So, $x = 18°$ 1

$\therefore a = 2\times18° = 36°$

$b = 3\times18° = 54°$

.....

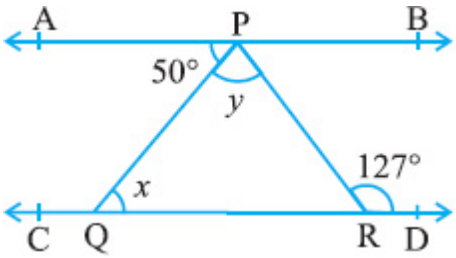
In fig. b+c is on Straight line

therefore, $b+c = 180°$

$c+54° = 180°$ 1

$\therefore c = 126°$

.....OR.....




1

<u>Given</u> :- AB II CD , $\angle APQ = 50°$ and $\angle APR = 127°$

.....

<u>To Find</u> :- The value of x and y

.....

<u>Solution</u> :- AB II CD and PQ is a transversal line. (Given) 1

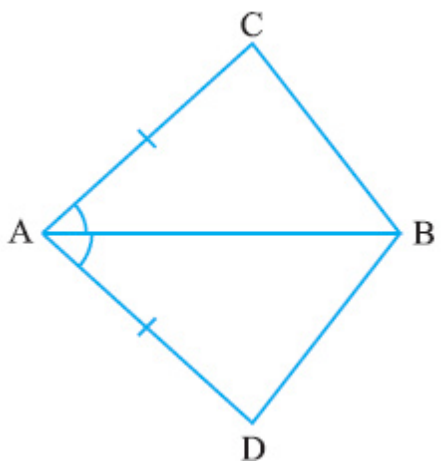
$\angle APQ = \angle PQR$ (Alternate Angles) 1

By putting $\angle APQ = 50°$ and $\angle PQR = x$

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | $x = 50°$<br>.....<br>Also $\angle APR = \angle PRD$ (Alternate Angles)<br>Or, $\angle APR = 127°$ ( Given $\angle PRD = 127°$)<br>.....<br>We know that $\angle APR = \angle APQ + \angle QPR$<br>Now by putting values, $\angle QPR = y$ and $\angle APR = 127°$<br>We get $50° + y = 127°$<br>$y = 77°$<br>$x = 50°$ and $y = 77°$ | 1<br>1 |
| 34. | Let three sides of triangle 12x , 17x, 25x<br>Semi perimeter (s) $= \frac{540}{2} = 270$ cm<br>.....<br>$s = \frac{a+b+c}{2}$<br>$270 = \frac{12x+17x+25x}{2}$<br>$54x = 540$<br>$x = 10$<br>.....<br>First Side = 12x10= 120 cm<br>Second Side = 17x10 = 170 cm<br>Third Side = 25x10 = 250 cm<br>.....<br>$Area\ of\ \Delta = \sqrt{s(s-a)(s-b)(s-c)}$<br>$= \sqrt{270(270-120)(270-170)(270-250)}$ | 1<br>1<br>1<br>1 |

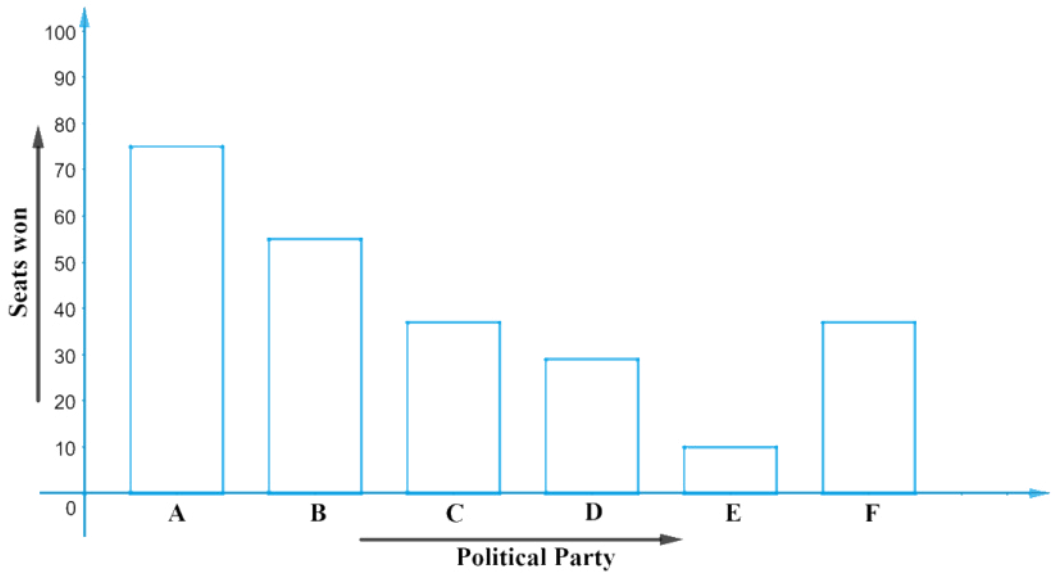
Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | .....<br>$= \sqrt{270(150)(100)(20)}$<br>$= 9000 \text{ cm}^2$<br>OR | 1 |
| 34. | Radius of conical cap (r) = 7 cm<br>Height of conical cap (h) = 24 cm<br>.....<br>Slant height of conical cap (L) = $\sqrt{(r)^2 + (h)^2}$<br>$= \sqrt{(7)^2 + (24)^2}$<br>$= \sqrt{49 + 576}$<br>$= \sqrt{625}$<br>$= 25$ cm<br>.....<br>Required area of sheet to make 10 caps = 10 πrL<br>.....<br>$= 10 \times \frac{22}{7} \times 7 \times 25$<br>$= 5500 \text{ cm}^2$<br>.....<br>Total cost of 10 caps = 5500 x 0.35 = 1925 Rs. | 1<br>1<br>1<br>1<br>1 |
| 35. |  <br><br><u>Given</u> :- AC = AD line AB bisect ∠A | 1 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | To Prove :- **ΔABC ≅ ΔABD**<br>**Proof:-** In ΔABC and ΔABD<br>(i) AC = AD ( Given)<br>(ii) AB = AB (Common)<br>(iii) ∠CAB = ∠DAB (Because AB is bisector of ∠A Given)<br>Hence, ΔABC ≅ ΔABD. ( By S.A.S)<br>Hence BC =BD ( By C.P.C.T ) | 1<br>1<br>1<br>1 |
| | **SECTION-E** | |
| 36. | (i) Sides of Triangle ABC 122m, 22m and 120m<br>Perimeter of Triangle = (122+22+120) = 264m<br>(ii) $Area\ of\Delta = \sqrt{s(s-a)(s-b)(s-c)}$ Where S= $\frac{a+b+c}{2}$<br>(i) Semi Perimeter (s) = 264/2 = 132 मी.<br>$Area\ of\Delta = \sqrt{s(s-a)(s-b)(s-c)}$<br>$=\sqrt{132(132-122)(132-22)(132-120)}$<br>$=\sqrt{132\times 10\times 110\times 12}$<br>$=1320\ m^2$<br>OR<br>We know Rent of Advertisement per year = 5000 $m^2$ | 1<br>1<br>2<br>2 |

Downloaded from www.cclchapter.com

| | | |
|---|---|---|
| | ∴ Rent of 3 months of the wall = Rs.(1680×5000×3)/12= Rs. 2100000 | |
| 37. | (i) Distance between Rahul and Neetu = 2 - (-2) = 4 Unit<br>.....<br>(ii) Ankit is sitting in (III) third quadrant<br>.....<br>(iii) By joining four places in order we get a rectangle<br><br>OR<br><br>(iii) Length = 8 Units Breadth = 4 Units<br>Area = 8X4 = 32 $m^2$ | 1<br><br>1<br><br>2<br><br><br><br>2 |
| 38. | (i) Political Party A won maximum number of Seats.<br>.....<br>(ii) Political party E won minimum number of seats.<br>.....<br>(iii) Bar Graph<br><br>  <br> | 1<br><br>1<br><br><br><br>2 |

Downloaded from www.cclchapter.com