Answer Ex–IV ADVANCED SUBJECTIVE QUESTIONS

1. $\frac{9}{2}$ **2.** 1/2 units **3.** (i) $\left(\frac{3}{2},\frac{7}{2},-2\right)$ (ii) $\sqrt{\frac{39}{2}}$ (iii) 5 unit **4.** $x^2 + (y-5)^2 + (z-5)^2 = 81$

5. $\theta = \cos^{-1}\frac{3}{\sqrt{14}}$ and $\phi = \cos^{-1}\frac{1}{\sqrt{5}}$ **7.** $\frac{x-1}{2} = \frac{y-2}{2} = \frac{z-3}{-3}$ **8.** $\frac{x}{1} = \frac{y}{2} = \frac{z}{-1}$ or $\frac{x}{-1} = \frac{y}{1} = \frac{z}{-2}$

9. $\frac{17}{2}$ **10.** $\frac{x-1}{6} = \frac{y+2}{13} = \frac{z+3}{17}$ **11.** x = 2t + 2; y = 2t + 1 and z = –t + 3

12. (a) $\frac{3}{2}$ (b) $\frac{2x}{3}+\frac{2y}{3}+\frac{z}{3} = 1$ (c) $\left(0,\frac{3}{2},0\right)$ (d) $\frac{x-2}{11} = \frac{y+1}{-10} = \frac{z-3}{2}$

13. (1, –2, –4) **14.** $\frac{x}{2}+\frac{y}{3}+\frac{z}{-5} = 1$, Area = $\frac{19}{2}$ sq. units **15.** $\frac{x-2}{11} = \frac{y+1}{-10} = \frac{z-3}{2}$

16. 2x + 3y +z + 4 = 0 **17.** p = 3, (2, 1, –1); x + y + z = 0 **18.** $\frac{x-7}{22} = \frac{y-2}{5} = \frac{z+1}{-4}$

19. $\frac{x-7}{3} = \frac{y-2}{6} = \frac{z-4}{2}$; $\frac{x-7}{2} = \frac{y-2}{-3} = \frac{z-4}{6}$ **20.** $\frac{x-4}{9} = \frac{y+1}{-1} = \frac{z-7}{-3}$

21. x – 2y + 2z – 1 = 0; 2 units

Answer Ex–V JEE PROBLEMS

1. (i) x + y – 2z = 3 ; (ii) (6, 5, –2) **2**. B **3**. 9/2 cubic units

4. **(a)** D ; **(b)** 2x – y + z – 3 = 0 and 62x + 29y + 19z – 105 = 0

5. **(a)** D **(b)** (A)–S, (B)–P, (C)–Q, R, (D)–S ; **(c)** (A)–Q, (B)–S, (C)–R

6. **(a)** D ; **(b)** (A)–R ; (B)–Q ; (C)–P ; (D)–S

7. **(a)** D ; **(b)** (i) B ; (ii) D ; (iii) C

8. (a) A ; **(b)** C ; **(c)** 7 **9.** C **10.** 6 **11.** A

12. (A)–T ; (B)–P,R ; (C)–Q ; (D)–R