## **Answer Ex-I**

# SINGLE CORRECT (OBJECTIVE QUESTIONS)

- **1.** B
- **2.** C
- **3.** B
- **4.** A
- **5.** D
- **6.** A
- **7.** A
- **8.** A

- **9.** B
- **10.** D
- **11.** A
- **12.** D
- **13.** A
- **14.** B
- **15.** A
- **16.** A

- **17.** B
- **18.** D
- **19.** A
- **20.** D
- **21.** A
- **22.** B
- **23.** A
- **24.** D

- **25.** A
- **26.** A
- **27.** D
- **28.** D
- **29.** C
- **30.** C
- **31.** B
- **32.** A

- **33.** C
- **34.** D
- **35.** C
- **36.** A
- **37.** B
- **38.** A
- **39.** C
- **40.** D

- **41.** B
- **42.** C
- **43.** C
- **44.** B
- **45.** B
- **46.** C
- **47.** A
- **48.** A

### **Answer Ex-II**

### **MULTIPLE CORRECT (OBJECTIVE QUESTIONS)**

- **1.** AB
- 2. AB
- **3.** BD
- **4.** AC
- **5.** AD
- 6. ABC
- **7.** C
- **8.** BD

- 9. ABCD
- **10.** AB
- **11.** BC
  - **12.** BC

# **Answer Ex-III**

#### SUBJECTIVE QUESTIONS

**2.** (1/2, 1/2, 1/2)

- **3.** (a/2, b/2, c/2) **4.** 3 : 2 ; (0, 13/5, 2)
- **5.** (2/3, -2/3, -1/3)
- **6.** 60°
- **8.** 2 2  $\sqrt{2}$

- **9.**  $x + y \pm \sqrt{2} z = 1$
- **10.**  $\pi/2$
- **11.** 11x y 3z = 35

12. 
$$\frac{x-4}{9} = \frac{y+1}{-1} = \frac{z-7}{-3}$$

**13.** 
$$\sqrt{26}$$

**14.** 
$$x^2 + y^2 + z^2 - y - 2z - 14 = 0$$
,  $\frac{317\pi}{24}$ 

**15.** 
$$7x + 13y + 4z - 9 = 0$$
;  $\left(\frac{12}{117} - \frac{-78}{117}, \frac{57}{117}\right)$ 

**16.** 
$$\frac{x-2}{1} = \frac{y+1}{13} = \frac{z+1}{9}$$

**17.** 
$$\alpha = -1$$
,  $\frac{80}{63}$ 

**19.** 
$$\frac{X}{1} = \frac{y}{2} = \frac{z}{-1}$$
;  $\frac{X}{-1} = \frac{y}{1} = \frac{z}{-2}$ 

**20.** 
$$\frac{x+1}{11} = \frac{y-1}{9} = \frac{z-1}{-15}$$

**21.** 
$$\cos^{-1} \frac{4}{9}$$

**22.** 
$$\sin^{-1} \frac{4}{\sqrt{30}}$$

**21.** 
$$\cos^{-1} \frac{4}{9}$$
 **22.**  $\sin^{-1} \frac{4}{\sqrt{30}}$  **24.**  $x + y + z = 0$ 

# **Answer Ex-IV**

### ADVANCED SUBJECTIVE QUESTIONS

1. 
$$\frac{9}{2}$$

**3.** (i) 
$$\left(\frac{3}{2}, \frac{7}{2}, -2\right)$$
 (ii)  $\sqrt{\frac{39}{2}}$  (iii) 5 unit

**4.** 
$$x^2 + (y - 5)^2 + (z - 5)^2 = 81$$

**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.**  $\frac{17}{2}$ 

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) 
$$\frac{1}{2}$$
, (b)  $\frac{1}{3}$   $\frac{1}{3}$   $\frac{1}{3}$  = 1, (c) (s)

**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.**  $\frac{x-2}{11} = \frac{y+1}{-10} = \frac{z-3}{2}$ 

**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.** 
$$\frac{x-7}{22} = \frac{y-2}{5} = \frac{z+1}{-4}$$

**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

**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)  $(6, 5, -2)$ 

3. 9/2 cubic units

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