

EXERCISE – II**MULTIPLE CORRECT (OBJECTIVE QUESTIONS)**

1. For the A.P. given by $a_1, a_2, \dots, a_n, \dots$, the equations satisfied are

- (A) $a_1 + 2a_2 + a_3 = 0$ (B) $a_1 - 2a_2 + a_3 = 0$
 (C) $a_1 + 3a_2 - 3a_3 - a_4 = 0$
 (D) $a_1 - 4a_2 + 6a_3 - 4a_4 + a_5 = 0$

2. If sum of the infinite G.P., $p, 1, \frac{1}{p}, \frac{1}{p^2}, \frac{1}{p^3}, \dots$ is $\frac{9}{2}$,

the value of p is

- (A) 3 (B) $\frac{2}{3}$ (C) $\frac{3}{2}$ (D) $\frac{1}{3}$

3. If positive numbers a, b, c are in A.P. and a^2, b^2, c^2 are in H.P., then

- (A) $a = b = c$ (B) $2b = a + c$
 (C) $b^2 = \sqrt{\frac{ac}{8}}$ (D) None of these

4. If the arithmetic mean of two positive numbers a & b ($a > b$) is twice their geometric mean, then $a : b$ is

- (A) $2 + \sqrt{3} : 2 - \sqrt{3}$ (B) $7 + 4\sqrt{3} : 1$
 (C) $1 : 7 - 4\sqrt{3}$ (D) $2 : \sqrt{3}$

5. If $\sum_{r=1}^n r(r+1)(2r+3) = an^4 + bn^3 + cn^2 + dn + e$, then

- (A) $a + c = b + d$ (B) $e = 0$
 (C) $a, b - 2/3, c - 1$ are in A.P. (D) c/a is an integer

6. If b_1, b_2, b_3 ($b_i > 0$) are three successive terms of a G.P. with common ratio r , the value of r for which the inequality $b_3 > 4b_2 - 3b_1$, holds is given by

- (A) $r > 3$ (B) $0 < r < 1$ (C) $r = 3.5$ (D) $r = 5.2$

7. The value of $\sum_{r=1}^n \frac{1}{\sqrt{a+rx} + \sqrt{a+(r-1)x}}$ is

- (A) $\frac{n}{\sqrt{a} + \sqrt{a+nx}}$ (B) $\frac{n}{\sqrt{a} - \sqrt{a+nx}}$
 (C) $\frac{\sqrt{a+nx} - \sqrt{a}}{x}$ (D) $\frac{\sqrt{a} + \sqrt{a+nx}}{x}$

8. Let a, x, b be in A.P.; a, y, b be in G.P. and a, z, b be in H.P. If $x = y + 2$ and $a = 5z$ then

- (A) $y^2 = xz$ (B) $x > y > z$
 (C) $a = 9, b = 1$ (D) $a = 1/4, b = 9/4$