SEQUENCES AND SERIES

RELATION BETWEEN AM & GM

EXERCISE

- **Q1.** If a, b, c are in G.P. and log_c a, log_b c, log_a b are in A.P. then the common difference of the A.P. is
 - (a)3 (b) $\frac{3}{2}$ (c) $\frac{1}{2}$ (d) $\frac{2}{3}$
- **Q2.** If a and b are two different positive real numbers, then which of the following statements is true?

(a) $2\sqrt{ab} > a + b$	(b) $2\sqrt{ab} < a + b$
(c) $2\sqrt{ab} = a + b$	(d)None of these

Q3. If a is positive and if A and G are the arithmetic mean and the geometric mean of the roots of $x^2 - 2ax + a^2 = 0$ respectively, then

(a)A=G (b) A = 2G (c) 2A=G (d) $A^2=G$

- **Q4.** If A.M. and G.M. of roots of a quadratic equation are 8 and 5, respectively, then obtain the quadratic equation.
 - (a) $x^2-16x + 15=0$ (b) $x^2-16x + 25=0$ (c) $x^2-16x + 5=0$ (d) $x^2-6x + 5=0$

Q5. The sum of two numbers is 6 times their geometric mean, the ratio of numbers is

(a) $(3 + 2\sqrt{2}): (3 - 2\sqrt{2})$	(b) $(2 + 5\sqrt{2}): (2 - 5\sqrt{2})$
(c) $(3 + 5\sqrt{2}): (3 - 5\sqrt{2})$	(d) $(3 + 5\sqrt{2}): (3 - 5\sqrt{2})$

CLASS 11

MATHS

- **Q6.** Which of the following is true if A means arithmetic mean and G means geometric mean of two numbers?
 - (a) A > G (b) $A \ge G$ (c) G < A (d) $G \le A$
- **Q7.** The ratio of the A.M. and G.M. of two positive numbers a and b is 5: 3. Find the ratio of a to b.
 - (a) 9:1 (b) 3:5 (c) 1:9 (d) 3:1

Q8. The harmonic mean between two numbers is $14\frac{2}{5}$ and the geometric mean is 24. The greater number between them is

- (a)72 (b)54 (c)36 (d)None of these
- **Q9.** Suppose a, b, c are in AP and a^2 , b^2 , c^2 are in GP. If a < b < c and $a + b + c = \frac{3}{2}$, then the value of a is
 - (a) $\frac{1}{2\sqrt{2}}$ (b) $\frac{1}{2\sqrt{3}}$ (c) $\frac{1}{2} \frac{1}{\sqrt{3}}$ (d) $\frac{1}{2} \frac{1}{\sqrt{2}}$

Q10. Let the harmonic mean and the geometric mean of two numbers be in the ration 4 :5. The two numbers are in the ratio

(a) 1:1 (b) 2:1 (c) 3:1 (d) 4:1

ANSWER

- **1.** (b)
- **2.** (b)
- **3.** (a)
- **4.** (b)
- **5.** (a)
- **6.** (b)
- **7.** (a)
- **8.** (a)