DEPARTMENT OF PUBLIC INSTRUCTION
OFFICE OF THE DEPUTY DIRECTOR OF PUBLIC INSTRUCTION-HAVERI
2020-21 DISTRICT LEVEL SSLC STUDENTS UNTIWISE LIVEWORK SHEET
TOPIC: QUADRATIC EQUATIONS
SUB: MATHEMATICS MEDIUM:ENGLISH(81E)

I. CHOOSE CORRECT OPTION.

1. The roots of the equation $7x^2 + x - 1 = 0$ are
(a) real and distinct
(b) real and equal
(c) not real
(d) none of these

2. The equation $12x^2 + 4kx + 3 = 0$ has real and equal roots, if
(a) $k = \pm 2$
(b) $k = \pm 9$
(c) $k = 4$
(d) $k = \pm 3$

3. If -5 is a root of the quadratic equation $2x^2 + px - 15 = 0$, then
(a) $p = 3$
(b) $p = 5$
(c) $p = 7$
(d) $p = 1$

4. The roots of the equation $(b - c)\, x^2 + (c - a)\, x + (a - b) = 0$ are equal, then
(a) $2a = b + c$
(b) $2c = a + b$
(c) $b = a + c$
(d) $2b = a + c$

5. A chess board contains 64 equal squares and the area of each square is 6.25 cm^2. A border round the board is 2 cm wide. The length of the side of the chess board is
(a) 8 cm
(b) 24 cm
(c) 12 cm
(d) 36 cm

6. The sum of the squares of two consecutive natural numbers is 313. The numbers are
(a) 12, 13
(b) 13,14
(c) 11,12
(d) 14,15

7. The roots of quadratic equation $5x^2 - 4x + 5 = 0$ are
(A) Real & Equal (B) Real & Unequal
(C) Not real (D) Non-real and equal

8. Which constant should be added and subtracted to solve the quadratic equation $4x^2 - \sqrt{3}x + 5 = 0$ by the method of completing the square?
(A) 9/16 (B) 3/16
(C) 3/4 (D) $\sqrt{3}/4$

9. If 1/2 is a root of the equation $x^2 + kx - (5/4) = 0$ then the value of k is
(A) 2 (B) – 2
(C) 3 (D) –3

10. A natural number, when increased by 12, equals 160 times its reciprocal. Find the number.
(A) 3 (B) 8 (C) 4 (D) 7

11. The product of two successive integral multiples of 5 is 300. Then the numbers are:
(A) 25, 30 (B) 10, 15 (C) 30, 35 (D) 15, 20

12. If $p^2x^2 - q^2 = 0$, then x =?
(A) $\pm q/p$ (B) $\pm p/q$ (C) p (D) q

13. If the one root of the equation $4x^2 - 2x + p - 4 = 0$ be the reciprocal of other. Then value of p is
(A) 8 (B) – 8 (C) – 4 (D) 4

14. Rohini had scored 10 more marks in her mathematics test out of 30 marks, 9 times these marks would have been the square of her actual marks. How many marks did she get in the test?
(A) 14 (B) 16 (C) 15 (D) 18

15. A train travels at a certain average speed for a distance of 63 km and then travels a distance of 72 km at an average speed of 6 km/h more than its original speed. If it takes 3 hours to complete the total journey, what is its original average speed?
(A) 42 km/hr (B) 44 km/hr (C) 46 km/hr (D) 48 km/hr

16. Satvik observed that in a clock, the time needed by the minute hand of a clock to show 3 PM was found to be 3 min less than $t^2/4$ minutes at t minutes past 2 PM. Then t is equal to
(A) 14 (B) 15 (C) 16 (D) None of these

17. A takes 6 days less than B to finish a piece of work. If both A and B together can finish the work in 4 days, find the time taken by B to finish the work.
(A) 13 days (B) 12 ½ Days (C) 12 days (D) 15days

18. For $ax^2 + bx + c = 0$, which of the following statement is wrong?
(A) If $b^2 - 4ac$ is a perfect square, the roots are rational.
(B) If $b^2 = 4ac$, the roots are real and equal.
(C) If $b^2 - 4ac$ is negative, no real roots exist.
(D) If $b^2 = 4ac$, the roots are real and unequal.

19. Roots of quadratic equation $x^2 - 3x = 0$, will be
(A) 3 (B) 0, –3 (C) 0, 3 (D) none of these

20.If the equation $x^2 - kx + 1$, have no real roots, then
(A) $-2 < k < 2$ (B) $-3 < k < 3$ (C) $k > 2$ (D) $k < -2$

ALL THE BEST