Choose the correct option.

1. \(\sqrt{5} - 3 - 2\) is:
   A. a rational number  
   B. a natural number  
   C. equal to zero  
   D. an irrational number

2. Let \(x = \frac{7}{22 \times 53}\) be a rational number. Then \(x\) has decimal expansion which terminates:
   A. after four places of decimal  
   B. after three places of decimal  
   C. after two places of decimal  
   D. after five places of decimal

3. The decimal expansion of \(\frac{63}{72 \times 175}\) is:
   A. Terminating  
   B. Non-terminating  
   C. Non terminating and repeating  
   D. None of these

4. If HCF and LCM of two numbers are 4 and 9696, then the product of the two numbers is:
   A. 9696  
   B. 24242  
   C. 38784  
   D. 4848

5. \((2 + \sqrt{3} + \sqrt{5})\) is a:
   A. natural number  
   B. Integer number  
   C. Rational number  
   D. Irrational number

6. If \(\left(\frac{9}{7}\right)^3 \times \left(\frac{49}{81}\right)^{2x-6} = \left(\frac{7}{9}\right)^9\), the value of \(x\) is:
   A. 12  
   B. 9  
   C. 8  
   D. 6

7. The number .211 2111 21111 211111…… is a:
   A. terminating decimal  
   B. non-terminating repeating decimal  
   C. non-terminating decimal which is non-repeating  
   D. None of the above

8. If \((m)^n = 32\), where \(m\) and and \(n\) are positive integers, then the value of \((m)^{mn}\) is:
   A. 32  
   B. 25  
   C. (5)10  
   D. (5)25

9. The number 0.57 in the \(\frac{p}{q}\) form \((q \neq 0)\) is:
   A. \(\frac{19}{35}\)  
   B. \(\frac{57}{99}\)  
   C. \(\frac{57}{95}\)  
   D. \(\frac{19}{30}\)
10. 0.57 can be written as $\frac{p}{q}$, $q \neq 0$ as:

- A. $\frac{26}{45}$
- B. $\frac{13}{27}$
- C. $\frac{13}{29}$
- D. $\frac{57}{99}$

11. Any one of the numbers $a$, $(a + 2)$ and $(a + 4)$ is a multiple of:

- A. 2
- B. 3
- C. 5
- D. 7

12. If $p$ is a prime number and $p$ divides $k^2$, then $p$ divides:

- A. $2k^2$
- B. $k$
- C. $3k$
- D. None of these

13. For some integer $m$, every even integer is of the form

(A) $m$  (B) $m + 1$  (C) $2m$  (D) $2m + 1$

14. For some integer $q$, every odd integer is of the form

(A) $q$  (B) $q + 1$  (C) $2q$  (D) $2q + 1$

15. $n^2 - 1$ is divisible by 8, if $n$ is

(A) an integer  (B) a natural number  (C) an odd integer  (D) an even integer

16. If the HCF of 65 and 117 is expressible in the form $65m - 117$, then the value of $m$ is

(A) 4  (B) 2  (C) 1  (D) 3

17. The largest number which divides 70 and 125, leaving remainders 5 and 8, respectively, is

(A) 13  (B) 65  (C) 875  (D) 1750

18. If two positive integers $a$ and $b$ are written as $a = x^3y^2$ and $b = xy^3$; $x$, $y$ are prime numbers, then HCF $(a, b)$ is

(A) $xy$  (B) $xy^2$  (C) $x^3y^3$  (D) $x^2y^2$

19. If two positive integers $p$ and $q$ can be expressed as $p = ab^2$ and $q = a^3b$; $a$, $b$ being prime numbers, then LCM $(p, q)$ is

(A) $ab$  (B) $a^2b^2$  (C) $a^3b^2$  (D) $a^3b^3$

20. The product of a non-zero rational and an irrational number is

(A) always irrational  (B) always rational  (C) rational or irrational  (D) one