Preparatory exam -2020
Class- 7
Time:1h15 mins Subject -Mathematics Total marks-(M.C.Q-30)+(C.Q-20)

Multiple choice questions

1. $\sqrt{2}, \sqrt{3}, \sqrt{5}$ and $\sqrt{6}$ are which of the following type of number?
a. rational b. irrational c. fraction d. complex

2. which of the following number is to be added with 45 to get perfect square?
a. 1 b. 2 c. 3 d. 4

3. which of the following number is to be subtracted from 8655 to get perfect square?
a. 2 b. 6 c. 8 d. 9

4. Consider the following information-
i) square root of $\frac{25}{49}$ is $\frac{5}{7}$
ii) square of $\frac{3}{5}$ is $\frac{9}{25}$
iii) square root of $\frac{37}{12}$ is 1.80
which of the following is correct?
a. i and ii b. i and iii
c. ii and iii d. i, ii and iii

5. If we square root such a number which is not perfect square , then we get which type of number?
a. rational b. irrational c. negative d. integer

6. which of the following is the square root of 0.0001?
a. 0.1 b. 0.01 c. 0.001 d. 0.0001

7. The difference of square of two consecutive numbers is 13. If one number is 7, which is the other number?
a. 5 b. 6 c. 8 d. 9

8. If we arrange 63009 soldiers in form of a square, then 8 soldiers left excess. How many soldiers are in each row?
a. 250 b. 251 c. 350 d.351

9. Irrational number is-
i) whose numbers of digits after decimal are not fixed
ii) integer
iii) which cannot be expressed in a fractional form
which of the following is correct?
a. i and ii b. i and iii
c. ii and iii d. i, ii and iii

10. The decimal number 1.79 is which type of fraction ?
a. natural b. irrational c. rational d. integer

11. In a garden there are 10 rows and each row contain 10 trees. Which of the following is the number of trees if we add more 200 trees with previous?
a. 97 b. 99 c. 100 d. 300

12. In the square root of 12.25, which of the following is the unit place of whole part?
a. 1 b. 2 c. 3 d. 5

13. Addition of 29 with the square of which number is equal to 758?
a. 25 b. 26 c. 27 d. 28

14. which of the following is the square root of $\frac{729}{81}$?
a. 3 b. 6 c. $\frac{27}{9}$ d. 9

15. which number is to be divided by 972,so that the quotient would be perfect square?
a. 2 b. 3 c. 4 d. 5

16. $x^p \times x^q$= what?
a. x^{pq} b. x^{p+q} c. x^{2pq} d. x^{2+pq}

17. $(x^2)^3 \times x^3$= what?
a. x^5 b. x^6 c. x^8 d. x^9

18. (a+7)(a-3)= what?
a. a^2+10a-21 b. a^2+4a+21
c. a^2+4a-21 d. a^2-4a-21

Answer to questions no. (19 and 20) following the information:
a, b and c are three algebraic expressions.

19. which of the following is commutative law for a and b?
a. $a \times b = b \times a$ b. $b \times a = b \times a$
c. $-a \times b = b \times (-1)$ d. $(-a) \times (-b) = (-b) \times a$

20. which of the following is associative law of multiplication for a , b and c?
a. $(a \times b) \times c = a \times b$ b. $a \times b \times (-c) = a \times b \times c$
c. $(a \times b) \times c = a \times b$ d. $(a \times b) \times c = a \times (b \times c)$

21. which of the following is the quotient if we divide $(a^3b^4-3a^7b^7)$ by $(-a^3b^3)$?
a. $b-3a^4b^4$ b. $-b-a^4b^4$ c. $-b+3a^4b^4$ d. $ab-a^4b^4$

22. $(x^3-y^3) \div (x-y)$= what?
a. x^2-y^2 b. x^2-xy+y^2
c. x^2+y^2 d. x^2+xy+y^2

23. $(x^4-1) \div (x^2+1)$= what?
a. x^2+1 b. $x+1$ c. x^2-1 d. $x-1$

24. if $a \neq 0$, then-
i) $a^m \div a^n = a^{m+n}$
ii) $a^m \div a^m = 1$
iii) $a^0 = 1$
which of the following is correct?
a. i and ii b. i and iii

c. ii and iii d. i, ii and iii

25. which of the following is the quotient, if we divide $16a^3b^2c$ by $4ab^2$?

a. $4a^2c$ b. $4b^2c$ c. 4ac d. 4ab

26. $(a+b)^2 + (a-b)^2$= what?

a. 4ab b. a^2+b^2 c. $2(a^2+b^2)$ d. ab

27.If a+b=3 and a-b=2, then $2(a^2+b^2)$=what?

a. 12 b. 13 c. 14 d.15

28. what is the value of $(5x-3)^2$?

a. $25x^2+30x+9$ b. $25x^2+9$

c. $25x^2-30x+9$ d. $25x^2-9$

29. If $x+\frac{1}{x} = 2$, then $x^2+\frac{1}{x^2}$ = what?

a. 2 b. 3 c. 4 d. 6

30. If m= -1 , then $m-\frac{1}{m}$ = what?

a. -2 b. 0 c. 2 d. 3

Creative questions

1. There are 651201 soldiers in a troop.

a. find the square root of 6 up to two decimal places. 2

b. at least how many soldiers is to be removed so that the soldiers can be arranged in form of a square? 4

c. at least how many soldiers is to be added so that the soldiers can be arranged in form of a square? 4

2. $x+y = 13$, $x- y =6$ and $a-\frac{1}{a} = 3$

a. prove that, $a^2-3a-1=0$. 2

b. find the value of $5(x^2+y^2)$. 4

c. prove that, $(a^2-\frac{1}{a^2})^2 =117$. 4

Syllabus

Class – 7
Subject –mathematics
Arithmetic : ex -1.1, 1.2
Algebra : ex- 4.1, 4.2, 5.1