X-OT

Name: MAT-1

Section: Reg. No.

One Mark Test - 1

Standard X

MATHEMATICS

T. Venkadapathi.,M.sc.,B.Ed.,DCA
B.T. Asst (Mathematics)
Nehru matriculation school.
Navakkurichi(p.o).Attur(t.k)
Salem(d.t).PinCode:636112

Time: 45 mts. Marks: 30

Choose and write the correct answer: 30x1=30

1. If $n(A\times B)=6$ and $A=\{1,3\}$ then $n(B)$ is ....
   a) 1 b) 2 c) 3 d) 6
2. For any two non-empty sets A and B, $A\times B$ is called as ....
   a) Relation b) Cartesian product c) Domain d) Co-Domain
3. "The cartesian product" is also referred as ....
   a) Region b) Cartesian set c) Rectangular region d) Cross product
4. If $n(A)=p$ and $n(B)=q$, then $n(A\times B)=$
   a) p.q b) p×q c) {p, q} d) pq
5. Real numbers $R=Q\cup Q'$ where Q' is the set of all ....
   a) Natural numbers b) Irrational numbers c) Rational numbers d) Integers
6. If $A=\{1,2\}$, $B=\{0,1\}$ then $A\times B$ is ....
   a) $\{(1,0),(1,1),(2,0),(2,1)\}$ b) $\{(1,0),(2,1)\}$
   c) $\{(1,1),(1,2),(0,1),(0,2)\}$ d) None of these
7. If A, B, C are any three sets, then $A\times(B\cup C)$ is equal to ....
   a) $(A\times B)\cup(A\times C)$ b) $(A\cup B)\cup(A\cup C)$ c) Both (a) and (b) d) None of these
8. If $A=\{a,b,p\}$, $B=\{2,3\}$, $C=\{p,q,r,s\}$ then $n[(A\cup C)\times B]$ is ....
   a) 8 b) 20 c) 12 d) 16
9. If $A=\{1,2\}$, $B=\{1,2,3,4\}$, $C=\{5,6\}$ and $D=\{5,6,7,8\}$, then state which of the following statement is true?
   a) $(A\times C)\subset(B\times D)$ b) $(B\times D)\subset(A\times C)$ c) $(A\times B)\subset(A\times D)$ d) $(D\times A)\subset(B\times A)$
10. If there are 1024 relations from a set $A=\{1,2,3,4,5\}$ to a set B, then the number of elements in B is
    a) 3 b) 2 c) 4 d) 8
11. The range of the relation $R=\{(x,x^2)/x$ is a prime number less than $13\}$ is ....
    a) $\{2,3,5,7\}$ b) $\{2,3,5,7,11\}$ c) $\{4,9,25,49,121\}$ d) $\{1,4,9,25,49,121\}$
12. If the ordered pairs $(a+2,4)$ and $(5,2a+b)$ are equal then, (a, b) is ....
    a) $(2,-2)$ b) $(5,1)$ c) $(2,3)$ d) $(3,-2)$
13. Let $n(A)=m$ and $n(B)=n$, then the total number of non-empty relations that can be defined from A to B is
    a) m^n b) n^m c) $2^{mn}-1$ d) 2^{mn}
14. Let $A=\{a,b,c,d\}$, $B=\{b,c,d,e\}$, then $n\{(A\times B)\cap(B\times A)\}=$
    a) 3 b) 6 c) 9 d) None of these

15. If A is the sets of even numbers less than 8 and B is the set of prime numbers less than 7, then number of relations from A to B is
a) 2^9 b) 9^2 c) 3^2 d) 2^{9-1}
16. Let R be a relation from set A to a set B, then
a) $R = A \cup B$ b) $A \cap B$ c) $R \subseteq A \times B$ d) $R \subseteq B \times A$
17. When will A×B be equal to B×A?
a) $A \neq B$ b) $A = B$ c) $A \subset B$ d) $A \cup B$
18. If $A = \{\ \}$, $B = \{1, 2\}$ then $n(A \times B) =$
a) 0 b) $\{\ \}$ c) 2 d) not defined
19. If $n(A) = 2$ and $n(B) = 4$ then $n(A \times B) =$
a) 6 b) 8 c) 16 d) 2
20. If $A \times B = \phi$ then
a) $A = \phi$ and $B = \phi$ b) $A \neq \phi$ and $B \neq \phi$ c) $A = \phi$ or $B = \phi$ d) $A \neq \phi$ or $B = \phi$
21. If $n(m \times n) = 36$ and $n(n) = 6$ then $n(m) =$
a) 2 b) 3 c) 4 d) 6
22. Identify the incorrect in the below
a) $n(A \times B) = n(B \times A)$ b) $A \times B = B \times A$
c) $A \times (B \cup C) = (A \times B) \cup (A \times C)$ d) $A \times (B \cap C) = (A \times B) \cap (A \times C)$
23. If $A = \{1, 2\}$ and $B = \phi$ then $B \times A =$
a) $\{2\}$ b) $\{3\}$ c) ϕ d) $\{2, 1\}$
24. The relation R, in the subset of ....
a) $\subseteq A$ b) $\subseteq B$ c) $\subseteq A \times B$ d) $A \supseteq$
25. If $n(A) = 2$, $n(B) = 3$ then find the number of relations from A to B
a) 8 b) 9 c) 64 d) 36
26. A relation R from A to B is a non-empty subset of ....
a) $A \times B$ b) $B \times A$ c) $A \cup B$ d) $B \cup A$
27. If $n[P(A)] = 64$, then n(A) is
a) 6 b) 8 c) 4 d) 5
28. If $A = \{1, 2, 3\}$, $B = \phi$ then $A \times B = ?$
a) $\{1, 2, 3\}$ b) $\{(1,0), (2,0), (3,0)\}$ c) $\{\ \}$ d) $\{(0,1), (0,2), (0,3)\}$
29. If $n(A) = 4$, $n(A \times B) = 36$, then $n(B) =$
a) 4 b) 6 c) 8 d) 9
30. For any two non empty sets P and Q, P × Q is
a) $\{(x, y) / x \in P \text{ or } y \notin Q\}$ b) $\{(x, y) / x \notin P \text{ or } y \in Q\}$
c) $\{(x, y) / x \in P \text{ and } y \in Q\}$ d) $\{(x, y) / x \notin P \text{ and } y \notin Q\}$

~~~
~~~

Name:

Section: Reg. No.

MAT-2

One Mark Test - 2

Standard X

MATHEMATICS

T. Venkadapathi.,M.sc.,B.Ed.,DCA
B.T. Asst (Mathematics)
Nehru matriculation school.
Navakkurichi(p.o).Attur(t.k)
Salem(d.t).PinCode:636112

Time: 45 mts

Marks: 30

Choose and write the correct answer:

30x1=30

1. What is the sum of prime factors of 240?
   a) 16 b) 14 c) 12 d) 10
2. The HCF of numbers of the form 2^m and 3^n is
   a) 2 b) 3 c) 1 d) 0
3. Euclid's division lemma states that for positive integers a and b, there exist unique integers q and r such that $a = bq + r$, where r must satisfy
   a) $1 < r < b$ b) $0 < r > b$ c) $0 \le r < b$ d) $0 = r \le b$
4. Using Euclid's division lemma, if the cube of any positive integer is divided by 9 then the posible remainders are
   a) 0, 1, 8 b) 1, 4, 8 c) 0, 1, 3 d) 1, 3, 5
5. If the H.C.F of 65 and 117 is expressible in the form of $65m - 117$ then the value of m is
   a) 4 b) 2 c) 1 d) 3
6. $t_n = a + (n-1)d$, here d is ....
   a) First term b) Common difference
   c) Arithmetic progression d) Geometric progression
7. The sum of the exponents of the prime factors in the prime factorization of 1729 is
   a) 1 b) 2 c) 3 d) 4
8. The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is
   a) 2025 b) 5220 c) 5025 d) 2520
9. Given $F_1 = 1$, $F_2 = 3$ and $F_n = F_{n-1} + F_{n-2}$, then F_5 is
   a) 3 b) 5 c) 8 d) 11
10. The first term of an arithmetic progression is unity and the common difference is 4. Which of the following will be a term of this A.P
    a) 4551 b) 10091 c) 7881 d) 13531
11. If 6 times of 6^{th} term of an A.P is equal to 7 times the 7^{th} term, then the 13^{th} term of A.P is
    a) 0 b) 6 c) 7 d) 13
12. An A.P consists of 31 terms. If its 16^{th} term, is m, then the sum of all terms of this A.P is
    a) 16m b) 62m c) 31m d) $\frac{31}{2}m$
13. In an A.P the first term is 1 and common difference is 4. How many terms of the A.P must be taken for their sum to be equal to 120?
    a) 6 b) 7 c) 8 d) 9

14. Highest common factor is also called as ....
a) Least common multiples b) Greatest Common Divisor
c) Both (a) and (b) d) None of these

15. The number of divisors of any prime number is ....
a) 1 b) 2 c) 3 d) 4

16. Each element in the sequence is called a .... of the sequence.
a) element b) term c) sequence d) none of these

17. If the number of elements in the sequence is finite then it is called .... sequence.
a) finite b) infinite c) unique d) real

18. A sequence can be considered as a function defined on the set of ....
a) Whole Numbers b) Natural Numbers c) Integers d) Function

19. $\frac{1}{2}, \frac{1}{6}, \frac{1}{10}, \frac{1}{14}, \ldots\ldots$
a) $\frac{1}{12}$ b) $\frac{1}{8}$ c) $\frac{1}{18}$ d) $\frac{1}{20}$

20. The n^{th} term of a sequence 0, 2, 6, 12, 20, ... can be expressed as ....
a) $a_n = n(n+1)$ b) $a_n = n(n-1)$ c) $a_n = n(n^2)$ d) $a_n = n(2n-1)$

21. Arithmetic progression denoted by ....
a) A.P b) G.P c) A.B d) G.B

22. Arithmetic progression is a sequence whose successive terms differ by a .... number.
a) finite b) infinite c) unique d) constant

23. n^{th} term of an A.P is denoted by t_n and t_n = ...
a) $a+(n+1)d$ b) $a+(nd)$ c) $a+(n-1)d$ d) ad

24. In a finite A.P whose first term is 'a' and last term ℓ, then the number of terms in the A.P is given by n =
a) $\frac{\ell+a}{d}+1$ b) $\ell-a$ c) $\frac{\ell-a}{d}+1$ d) $\frac{\ell a}{d}$

25. Find whether the following sequences are not in A.P
a) 2,4,9,16, ... b) 2,6,8,16, ... c) 2,4,8,16, ... d) 2,16, ...

26. Three non zero numbers a, b, c are in A.P if and only if ....
a) $2b=a+c$ b) $2b=b+c$ c) $2c=a+b$ d) $b=a+c$

27. The common difference of a constant A.P is ....
a) 0 b) 1 c) 2 d) 3

28. If t_n is n^{th} term of an A.P. then $t_{2n}-t_n$ is ....
a) nd b) nt c) t_n d) 0

29. Find the number of terms in the A.P 3, 6, 9, 12, ... , 111
a) 35 b) 36 c) 37 d) 38

30. Sum of first n odd numbers = ...
a) n b) n^2 c) n^3 d) n^4

~~~
~~~

Name: Section: Reg. No.

One Mark Test - 3

Standard X

MATHEMATICS

T. Venkadapathi.,M.sc.,B.Ed.,DCA
B.T. Asst (Mathematics)
Nehru matriculation school
Navakkurichi(p.o).Attur(t.k)
Salem(d.t).PinCode:636112

Time: 45 mts Marks: 30

Choose and write the correct answer: 30x1=30

1. Any first degree equation containing two variables x and y is called .... equation in two variables.
   a) linear b) quadratic c) cubic d) none
2. A linear equation in two variables of the form .... = 0, represents a straight line.
   a) $ax + by$ b) $ax + by + c$ c) $ax + by + cz + d$ d) $ax - by$
3. A system with .... will reduce to identity.
   a) infinitely many solutions b) finite solution
   c) only one solution d) no solution
4. A system with .... will provide absurd equation.
   a) infintely many solutions b) finite solution
   c) only one solution d) no solution
5. If $r(x) = 0$ when $f(x)$ is divided by $g(x)$, then $g(x)$ is called .... of the polynomials.
   a) factor b) divisor c) equations d) none
6. If $f(x) = g(x)\,q(x) + r(x)$, ... must be added to f(x) to make f(x) completely divisible by g(x)
   a) f(x) b) q(x) c) $-r(x)$ d) g (x)
7. find the LCM of $4x^2y, 8x^3y^2$
   a) $4x^2y$ b) $8x^3y^2$ c) $8x^2y^2$ d) $8x^2y^3$
8. A rational expression is the ratio of .... polynomials.
   a) one b) two c) three d) zero
9. The number of excluded value of $\dfrac{x^3 + x^2 - 10x + 8}{x^4 + 8x^2 - 9}$ is ....
   a) 1 b) 2 c) 3 d) 4

10. $\frac{x^3}{9y^2} \times \frac{27y}{x^5} = \ldots\ldots\ldots\ldots$

a) $\frac{3}{x^2y}$ b) $\frac{27}{x^2y}$ c) $\frac{27x^3y}{y^2x^5}$ d) $\frac{x^2y}{3}$

11. $f(x).g(x) = LCM \times \ldots\ldots\ldots\ldots$

a) LCM b) GCD c) GCM d) None

12. A value that makes a rational expression $\frac{p(x)}{q(x)}$ undefined is called an ....

a) Rational value b) Excluded value
c) Lowest value d) Highest value

13. $\sqrt{a^2x^2 + 2abx + b^2} = \ldots\ldots\ldots\ldots$

a) $|ax + b|$ b) $|a + bx|$ c) $|2a + bx|$ d) $|2b + x|$

14. The square root of $400x^4y^{12}z^{16}$ is ....

a) $20x^2y^6z^8$ b) $20x^6y^2z^8$ c) $20x^6y^8z^2$ d) $4y^8z^{12}$

15. If α and β are the roots of a quadratic equation $ax^2 + bx + c = 0$ then $\alpha + \beta = \ldots\ldots$

a) $\frac{-b}{a}$ b) $\frac{b}{a}$ c) $\frac{-a}{b}$ d) $\frac{a}{b}$

16. If α and β are the roots of a quadratic equation $ax^2 + bx + c = 0$ then $\alpha\beta = \ldots\ldots$

a) $\frac{b}{a}$ b) $\frac{c}{a}$ c) $\frac{a}{c}$ d) $\frac{a}{b}$

17. Formula for finding roots of a quadratic equation $ax^2 + bx + c = 0$ is $x = \ldots\ldots\ldots$

a) $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ b) $\frac{b \pm \sqrt{b^2 - 4ac}}{2a}$ c) $\frac{-b \pm \sqrt{b^2 + 4ac}}{2a}$ d) $\frac{b \pm \sqrt{b^2 + 4ac}}{2a}$

18. $b^2 - 4ac$ called as ....

a) equation b) root c) sets d) discriminant

19. A system of three linear equations in three variables is inconsistent if their planes.

a) intersect only at a point b) intersect in a line

c) coincides with each other d) do not intersect

20. The solution of the system $x+y-3z=-6, -7y+7z=7, 3z=9$ is

a) $x=1, y=2, z=3$ b) $x=-1, y=2, z=3$

c) $x=-1, y=-2, z=3$ d) $x=1, y=-2, z=3$

21. If $(x-6)$ is the HCF of $x^2-2x-24$ and x^2-kx-6 then the value of k is

a) 3 b) 5 c) 6 d) 8

22. $\frac{3y-3}{y} \div \frac{7y-7}{3y^2}$ is

a) $\frac{9y}{7}$ b) $\frac{9y^3}{21y-21}$ c) $\frac{21y^2-42y+21}{3y^3}$ d) $\frac{7(y^2-2y+1)}{y^2}$

23. $y^2+\frac{1}{y^2}$ is not equal to

a) $\frac{y^4+1}{y^2}$ b) $\left(y+\frac{1}{y}\right)^2$ c) $\left(y-\frac{1}{y}\right)^2+2$ d) $\left(y+\frac{1}{y}\right)^2-2$

24. $\frac{x}{x^2-25}-\frac{8}{x^2+6x+5}$ gives

a) $\frac{x^2-7x+40}{(x+5)(x-5)}$ b) $\frac{x^2+7x+40}{(x+5)(x-5)(x+1)}$

c) $\frac{x^2-7x+40}{(x^2-25)(x+1)}$ d) $\frac{x^2+10}{(x^2-25)(x+1)}$

25. The square root of $\frac{256x^8y^4z^{10}}{25x^6y^6z^6}$ is equal to

a) $\frac{16}{5}\left|\frac{x^2z^4}{y^2}\right|$ b) $16\left|\frac{y^2}{x^2y^4}\right|$ c) $\frac{16}{5}\left|\frac{y}{xz^2}\right|$ d) $\frac{16}{5}\left|\frac{xz^2}{y}\right|$

26. If $x=2y$ and $x+y=9$ then find the value of x

a) 3 b) 6 c) 9 d) 12

27. If $\frac{2}{x}-\frac{1}{y}=8$, $\frac{1}{z}+\frac{1}{y}=0$ and $\frac{3}{x}-\frac{1}{z}=2$ then the value of x is

a) $\frac{1}{2}$ b) $\frac{1}{3}$ c) 2 d) 3

28. Find the LCM of $8x^4y^2$, $48x^2y^4$

a) $48x^4y^4$ b) $8x^4y^4$ c) $8x^2y^2$ d) $48x^2y^2$

29. The solution of $(x-3)^2$ is

a) (0, 3) b) (3, 0) c) (3, 3) d) (0, 9)

30. Find the square root of $\frac{1}{x^2}+x^2=2$

a) $\frac{1}{x}+x$ b) $\frac{1}{x}-x$ c) $\frac{1}{x}+2x$ d) $\frac{1}{x}-2x$

~~~
~~~