FBQ1: Let G = {1, -1, i, -i}. Then G is a group under usual multiplication of complex numbers, in this group, the order of i is \_\_\_\_\_.

Answer: 4

FBQ2:

Answer: (4,1)

FBQ3:

Answer: N

FBQ4: The order of (12) in is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer: 2

FBQ5: In a permutation, any cycle of length two is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer: Transposition

FBQ6: A field K is called \_\_\_\_\_\_\_\_\_\_\_\_\_ of F if F is a subfield of K, thus Q is a subfield of R and R is a field extension of Q

Answer: Field extension

FBQ7:

Answer: Proper subfield

FBQ8:

Answer: Primitive

FBQ9: We call an integral domain R a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if every non – zero element of R which is not a unit in R can be uniquely expressed as a product of a finite number of irreducible elements of R

Answer: Unique factorization domain

FBQ10:

Answer: Greatest Common divisor

FBQ11: Given two elements a and b in a ring R, we say that c is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a and b if c|a and c|b.

Answer: Common divisor

FBQ12: We call an integral domain R a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if every ideal in R is a principal ideal.

Answer: Principal ideal

FBQ13: \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer: 2

FBQ14: Let R be an integral domain, an element a R is called a unit or an \_\_\_\_\_\_\_\_\_\_\_\_ in R if we can find bR such that ab = 1 i.e if a has a multiplicative inverse

Answer: Invertible element

FBQ15: A domain on which we can define a Euclidean valuation is called \_\_\_\_\_\_\_\_.

Answer: Euclidean domain

FBQ16:

Answer: Euclidean Evaluation

FBQ17:

Answer: Root of multiplicity m

FBQ18: Let F be a field and f(x) Fx we say that an element a F is a \_\_\_\_\_\_\_\_\_\_\_\_ (or zero) of f(x) if f(a) = 0

Answer: Factor

FBQ19: If S is set, an object ‘a’ in the collection S is called an\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of S

Answer: Element

FBQ20: A set with \_\_\_\_\_\_\_\_\_\_\_\_\_element in S is called an empty set

Answer: No

FBQ21: \_\_\_\_\_\_\_\_\_\_\_\_ method is sometimes used to list the element of a large set

Answer: Roster

FBQ22: The set of rational numbers and the set of real numbers are respectively represented by the symbol\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer: Q and R

FBQ23: The symboldenotes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Answer: There exist

FBQ24: If A and B are two subsets of a set S, we can collect the element that are common to both A and B, we call this set the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of A and B.

Answer: Intersection

FBQ25: A relation R defined on a set S is said to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if we have

Answer: Reflexive

FBQ26: A relation R defined on a set S is said to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_if

Answer: Symmetric

FBQ27: A relation R defined on a set S is said to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if a R b and

Answer: Transitive

FBQ28: A relation R defined on a set S that is reflexive, symmetric and transitive is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ relation

Answer: Equivalence

FBQ29: A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ f from a non – empty set A to a non – empty set B is a rule which associates with every element of A exactly on element of B

Answer: Function

FBQ30: A function is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_ if associates different elements of A with different element of B

Answer: Injective

FBQ31: A function is called \_\_\_\_\_\_\_\_\_\_\_\_ if the range of f is B.

Answer: Onto

FBQ32:

Answer: Projection

FBQ33: A function that is both one to one and onto is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: Bijective

FBQ34: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ set.

Answer: Finite

FBQ35: A set that is not \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is called infinite set

Answer: Finite

FBQ36: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer: Bijective

FBQ37: 1 and p

Answer: Prime

FBQ38: \_\_\_\_\_\_\_\_\_\_\_\_\_ number

Answer: Composite

FBQ39: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on A.

Answer: Identity function

FBQ40: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ on S.

Answer: Binary operation

FBQ41:

Answer: Closed

FBQ42:

Answer: Associative

FBQ43:

Answer: Commutative

FBQ44: \_\_\_\_\_\_\_\_\_\_.

Answer: Distributive over

FBQ45:

Answer: Identity element

FBQ46: The Cayley table is named after the famous mathemathecian

Answer: Arthur Cayley

FBQ47: \_\_\_\_\_\_\_\_\_\_\_\_ system consists of a set with a binary operation which satisfies certain properties is called a group

Answer: Algebraic

FBQ48:

Answer: The integral power

FBQ49: is an equivalence relation, and hence partition Z into disjoint equivalence classes called \_\_\_\_\_\_\_\_\_\_\_\_ modulo n.

Answer: Congruence class

FBQ50: If the set X is finite, say X = (1,2,3, …, n) then we denote S(x) by and each of is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on n symbols

Answer: Permutation

MCQ1: In a principle ideal Domain an element is prime if and only if it is

Answer: Reducible

MCQ2:

Answer: I only

MCQ3:

Answer: 3x+1

MCQ4:

Answer: II only

MCQ5:

Answer: II only

MCQ6:

Answer:

MCQ7:

Answer: 1

MCQ8:

Answer: f(a) = 1

MCQ9: Express x4+ x3+5x2-x  as (x2 +x+1)+rx in Q[x]

Answer: None of the options

MCQ10: Let F be a field. Let f(x) and g(x) be two polynomials in F[x] with g(x) ≠0. Then I There exist two polynomial q(x) and r(x) in F[x] such that f(x) = q(x)g(x) + r(x), where degr(x) &lt; degg(x).IIThe polynomial q(x) and r(x) are unique, which of the following is a properties of Division Algorithm

Answer: I only

MCQ11: Which of the following polynomial ring is free from zero divisor

Answer: Z6

MCQ12: . Let R be a ring and f(x) and g(x) be two non – zero element of R[x]. Then deg(f(x)g(x)) ≤ degf(x) + degg(x) with equality if

Answer: R does not have a zero divisor

MCQ13: If p(x), q(x) ∈ Z[x] then the deg(p(x).q(x)) is

Answer: Max (deg p(x), deg q(x))

MCQ14: If f(x) = a0+a1x+…+anxn and g(x) = b0+b1x+…+bmxm are two polynomial in R[x], we define their product f(x).g(x) = c0+c1x+…+cm+nxm+1 where ci is

Answer: ai bi ∀ i = 0,1, …, m+n

MCQ15: Consider the two polynomials p(x), q(x) in Z[x] by p(x) = 1+2x+3x2, q(x) = 4+5x+7x3. Then p(x) + q(x) is

Answer: 5+7x+3x2+7x3

MCQ16: Determine the degree and the leading coefficient of the polynomial        1+x3+x4+0.x5 is

Answer: (3,1)

MCQ17: The Degree of a polynomial written in this form deg(∑i=0naixi) if an ≠0 is

Answer: 0

MCQ18: Let R be a domain and x ∈ R be nilpotent then xn = 0 for some n ∈ N. Since R has no zero divisors this implies that

Answer: x = 1

MCQ19: An ideal m Z of Z is maximal if and only if m is

Answer: An even number

MCQ20:  Every maximal ideal of a ring with identity is

Answer: A field

MCQ21:  Let R be a ring with identity. An ideal M in R is Maximal if and only if R/M is

Answer: A field

MCQ22: &nbsp;An ideal p of a ring R with identity is a prime ideal of R if and only if the quotient ring is

Answer: An integral domain

MCQ23:  The characteristics of a field is either

Answer: None of the options

MCQ24: Zn is a field if and only if

Answer: n is an even number

MCQ25:  Which of the following is an axioms of a field

Answer: Is commutative

MCQ26:  Let R be a ring, the least positive integer n such that nx = 0 ∀ x ∈ R is called

Answer: The order of R

MCQ27: Which of the following is not a property of an integral domain

Answer: Is a commutative ring

MCQ28: A non – zero element in a ring R is called zero divisor in R if there exist a non – zero element b in R such that

Answer: ab = 0

MCQ29: If H is a subgroup of a group G and a, b ∈ G then which of the following statement is true

Answer: Ha = H Iff&nbsp;&nbsp; a∈&nbsp;H

MCQ30: Let G be a group and a∈G such that O(G) = t, then an= am, if and only if

Answer: None of the options

MCQ31: Which of these does not hold for ‘×’ distributive over , and ‘ –

Answer: A× (BC) = A×B A×C

MCQ32: The symmetric difference of two given sets A and B, denoted by A ∆ B is defined by

Answer: A ∆ B = ( A – B) or (B – A)

MCQ33: The (relative) complement (or difference) of a set A with respect to a set B denoted by B – A (or B\A) is the set

Answer: B – A = {x B :x∈A}

MCQ34: Which of the following is of the operations and

Answer: Associative A(BC) = (AB) C and A(BC) = (AB)C for three sets A,B,C

MCQ35: The intersection of two sets A and B written as AB is

Answer: The set AB = {x:x∈A and x∈B}

MCQ36: A set X of n elements has

Answer: 2n subsets

MCQ37: If G is a finite group such that O(G) is neither I nor a prime, then G has

Answer: Non – trivial proper subgroup

MCQ38: Which of the following is not the definition of Euler Phi – function MCQ39: Every group of prime order is

Answer: Non – abelian

MCQ40: An element is of infinite order if and only if all its power are

Answer: Real

MCQ41: Consider the following set of 8 2 ´ 2 matrices over ¢. Q8 = {±I, ±A, ±B, ±C} where I = , A = , B = , C = and i = -1. If H = &lt;A&gt; is a subgroup, how many distinct right cosets does it have in Q8

Answer: 8

MCQ42: Let H = 4Z. How many distinct right coset of H in Z do we have?

Answer: 2

MCQ43: A function f : A B is called one – one if and only if different element of B. some time is called

Answer: Bijective

MCQ44: Let G be a group, g ∈ G and m, n ∈ Z. which of the following does not hold

Answer: (gm)n = gmn

MCQ45: Let G be a group. If there exist g ∈ G has the form x = gn for some n ∈ Z then G is

Answer: A cyclic group

MCQ46: Let H = {I, (1, 2)} be a subgroup of S3. The distinct left cosets of H in S3are

Answer: H, (123)H, (12)H

MCQ47: The order of in Q8 is &nbsp;

Answer: 4

MCQ48: The order of (12) in S3 is

Answer: 1

MCQ49: A group generated by g is given by &lt;g&gt; = {e, g, g2, …,gm-1} the order of g is

Answer: 0

MCQ50: Let H be a subgroup of a finite group G. We call the number of distinct of H in G \_\_\_\_\_.

Answer: index