11121:Problem Solving Using Computers and 'C' Programming

1. The keyword used to transfer control from a function back to the calling function is

a) goto
b) switch
c) exit
d) Return

2. Which of the following function is more appropriate for reading in a multi-word string?

a) printf()

b) scanf()

c) puts()

d) gets()

3. Predict output of following program

```
#include<stdio.h>
 int main()
{
    int i;
    int arr[5] = {1};
   for (i = 0; i < 5; i++)
    printf("%d ", arr[i]);
    return 0;
    }
```

a) 0 1 1 1 1

b) 1 0 0 0 0

c) 0 0 0 0 0

d) 0 0 0 0 1

4.. Which of the following true about FILE *fp

a) FILE is a keyword in C for representing files and fp is a variable of FILE type.

b) FILE is a structure and fp is a pointer to the structure of FILE type

c) FILE is a stream

d) FILE is a buffered stream

5. A pointer is

a) A keyword used to create variable

b) A variable that stores value of instruction

c) A variable that stores address of other variable

d) None of the mentioned

6. Which among the following is NOT a logical or relational operator?

a) !=

b) ==

c) ||

d) =

7. What symbol is used to represent output in a flowchart?

a) Circle

b) Parallelogram

c) Diamond

d) Triangle

8. A software which links different elements of an object code with library files is known as

a) Editor

b) Linker

c) Loader

d) Debugger

9. _____is collection of elements of same data types

a) Union

b) Array

c) Structure

d) All of the above

10. Which of the following is TRUE about argv?

a) It is an array of character pointers

b) It is an array of strings

c) It is an array

d) None of the mentioned

11122: File Organization and Fundamental of Databases

1. Database_____which is the logical design of the database, and the database _____

   which is a snapshot of the data in the database at a given instant in time.
   a) Instance, Schema
   b) Relation, Schema
   c) Relation, Domain
   d) Schema, Instance

2. A_____integrity constraint requires that the values appearing in specified attributes of any tuple in the referencing relation also appear in specified attributes of at least one tuple in the referenced relation.
   a) Referential
   b) Referencing
   c) Specific
   d) Primary
3. Which of the following is used to denote the selection operation in relational algebra?
   a) Pi (Greek)
   b) Omega (Greek)
   c) Lambda (Greek)
   d) Sigma (Greek)

4. The basic data type char(n) is a_____length character string and varchar(n) is_____length character.
   a) Fixed, equal
   b) Equal, variable
   c) Fixed, variable
   d) Variable, equal

5. INSERT INTO instructor VALUES (10211, 'Smith', 'Biology', 66000); What type of statement is this?
   a) Query
   b) DML
   c) Relational
   d) DDL

6. If every non-key attribute is functionally dependent primary key, then the relation will be in
   a) First normal form
   b) Second normal form
   c) Third form
   d) Fourth normal form

7. We say that a decomposition having the property F'+ = F+ is a_____decomposition
   a) Dependency loosing
   b) Dependency Preserving
   c) Lossless
   d) None of the above

8. The attribute AGE is calculated from DATE_OF_BIRTH. The attribute AGE is
   a) Single valued
   b) Multi valued
   c) Composite
   d) Derived

9. In E-R diagram generalization is represented by
   a) Ellipse
   b) Dashed ellipse
   c) Rectangle
   d) Triangle

10. Type of file organization are
    a) Heap File
    b) Hash File
    c) Sorted File
    d) All of the above

Subject:- Algebra and Calculu

1. The number e is …… .

   a) Natural Number

   b) Rational Number

   c) Integer Number

   d) Irrational Number

2. If A= {a, b} & B= {1, 2}, then A × B contains …….. .

   a) (b, 1), (1, a)

   b) (b, 1), (1, a)

   c) (a, 2), (b, 1)

   d) (a, 1), (b, a)

3. If A is a set & B is a set then A= B if and only if ……. .

   a) A< B, & B> A

   b) A $\underline{C}$ B, & A< B

   c) A $\underline{C}$ B, & B $\underline{C}$ A

   d) B $\underline{C}$ A, & A< B

4. is a number……..

   a) Complex Number

   b) Irrational Number

   c)Real Number but not Irrational Number

d) Exponential Number

5. The set is called as collection of.....objects.

a) Defined

b) Not defined

c) Well defined

d) None of these

6. If f (x) = 2x and g (x) = $x^2/2 + 1$, then which of the following can be a discontinuous function

(a) f(x) + g(x)
(b) f(x) – g(x)
(c) f(x).g(x)
(d) g(x)/f(x)

7. The function f(x) = $4-x^2 / 4x-x^3$ is

a) discontinuous at only one point at x = 0
b) discontinuous at exactly two points
c) discontinuous at exactly three points
d) None of these

8. For the function f(x) = x + 1x, x ∈ [1, 3] the value of c for mean value theorem is

a) 1
b) √3
c) 2
d) None of these

9. If $y = ax^2 + b$, then dy/dx at x = 2 is equal to ax

a) 4a
b) 3a
c) 2a
d) None of these

10. What is derivative of log x?
a) $1/x^2$
b) 1/x
c) tanx
d) secx

MTC-101 Discrete Mathematics (M-I)

1)In propositional logic, which of the following is equivalent to p → q?

A. (p v q)→q
B. p v (q→p)
C. p v (p→q)
D. Both(b)&(c)

2) Which of the following statements is the contrapositive of the statement, "You win the game if you know the rules but are not overconfident."

A. If you lose the game then you don't know the rules or you are overconfident.
B. A sufficient condition that you win the game is that you know the rules or you are not overconfident.
C. If you don't know the rules or are overconfident you lose the game.
D. If you know the rules and are overconfident then you win the game.

3) A_____has a greatest element and a least element which satisfy 0<=a<=1 for every a in the lattice (say, L).

A. semilattice
B. join semilattice
C. meet semilattice
D. bounded lattice

4) If f is a function from A to B, where O(A) = m & O(B)= n , then total number of distinct functions are

A. nm
B. n^m
C. m^n
D. m+n

5) Find the value of a_4 for the recurrence relation $a_n=2a_{n-1}+3$, with $a_0=6$.

A. 320
B. 221
C. 141
D. 65

6) Number of edges incident with the vertex V is called?

A. Degree of a Graph
B. Handshaking Lemma
C. Degree of a Vertex
D. None of the above

7)If in a graph multiple edges between the same set of vertices are allowed, it is called?

A. Hamiltonian Graphs
B. Simple graph
C. Multi graph
D. Euler Graphs

8)A graph G is called a.....if it is a connected acyclic graph

A.Cyclic graph
B.Regular graph
C.Tree
D.Not a graph

9)A minimal spanning tree of a graph G is

A.A spanning sub graph
B.A tree
C.Minimum weights
D.All of above

Q.10. Radius of a graph, denoted by rad(G)is defined by. .....?

A. max{e(v): v belongs to V}

B. min{e(v): v belongs to V}

C. max{d(u,v): u belongs to v, u does not equal to v}

D.min{d(u,v): u belongs to v, u does not equal to v}

CSST 112- STATISTICAL METHODS – II

1. --- is referred to as the rectangular distribution
a) normal distribution
b) exponential distribution
c) uniform distribution
d) binomial distribution

2. If A and B are any two events defined on Ω, which of the following is a valid statement?
a) P (A U B) = P (A) + P (B) – P (A ∩ B)
b) P (A U B) = P (A) + P (B)
c) P (A U B) = P (A). P (B)
d) P (A U B) = P (A) + P (B) –2 P (A ∩ B)

3. The rejection probability of Null Hypothesis when it is true is called as?
a) Level of Confidence
b) Level of Significance
c) Level of Margin
d) Level of Rejection

4. The probability of Type 1 error is referred as?
a) $1-\alpha$
b) β
c) α
d) 1-β

5. Which of the following statement is true?
a) A and A' form partition of Ω.
b) A and Ω form partition of Ω.
c) A and A' do not form partition of Ω.
d) only two events cannot form a partition of Ω.

6. Which of the following is a continuous random variable?
a) Number of students present in the class
b) Number of persons possessing 'O –ve' blood group in a blood donation camp.
c) Number of daughters born to a couple until they son.
d) Weight of a new born baby

7. In an experiment of planting five seeds, the number of seeds germinated after a week are recorded. The sample space of this experiment is---

a) (0,5)

b) {1,2,3,4,5}
c) {0,1,2,3,4,5}

d) [0,5]

8. If X and Y are two r.v. with means E(X) and E(Y) respectively, then the expression E[(X – E(X))(Y –E(Y))] is called -----

a) variance of X
b) variance of Y
c) cov(X,Y)
d) corr(X,Y)

9. In an experiment, a coin is flipped, and the coin can either land heads up, or tails up. What would we call the outcome where the coin lands heads up?

a) An event
b) A sample space
c) A conditional probability
d) A probability

10. Let A and B be two events such that P(A) = 1⁄5 While P(A or B) = 1⁄2. Let P(B) = P. For what values of P are A and B independent?

a) 1⁄10 and 3⁄10
b) 3⁄10 and 4⁄5

c) 3⁄8 only

d) 3⁄10

11321:Principle Of Analog Electronics

1)A transistor is a …… operated device

1. current
2. voltage
3. both voltage and current
4. none of the above

2) In a tansistor, I_C = 100 mA and I_E = 100.2 mA. The value of β is ……

1. 100
2. 50
3. about 1
4. 200

3) Norton's equivalent resistance is the .....as Thevenin's equivalent resistance.

1. Not same
2. Same
3. Both A and B
4. None of the above

4)An n-channel D MOSFET with positive V_{GS} is operating in
1. The depletion mode
2. The enhancement mode
3. Cut off
4. Saturation

5) Ripple factor of half wave rectifier is _____
1. 1.414
2. 1.21
.3. 1.3
4. 0.48

6) **A zener diode is used as …….**
1. an amplifier
2. a voltage regulator
3. a rectifier
4. a multivibrator

7) LED is used as a
1. Rectifier
2. Regulator
3. Comparator
4. Light indicator

8) A unity-gain summing amplifier has three inputs, V1 = 1.0 mV, V2 = 1.5 mV, and V3 = 2.5 mV, calculate the total output voltage.

1. 2.5 mV
2. 3.5 mV
3. 4.0 mV
4. 5.0 mV

9) In a forward biased photo diode with increase in incident light intensity, the diode current—
1. Increases
2. Remains constant
3. Decreases
4. None of the above

10)For 180Kohm resistor with 10% tolerance, the colour band will be in the sequence of
1. **Brown-Grey-Yellow-Gold**
2. **Brown-Grey-Yellow- Silver**
3. **Brown-Blue-Yellow- Silver**
4. **Brown-Grey-Voilet- Silver**