1. UNIX Kernel is based _____ .
   A. Linux
   B. C
   C. C++
   D. C#
2. To use the input functions in the program _____ header file has to be included.
   A. stdio.h
   B. conio.h
   C. string.h
   D. stdlib.h
3. _____ is not the type of statement of C programming.
   A. Expression
   B. Compound
   C. Control
   D. Logical
4. << -bitwise operator shifts the number of bits of the given number in _____ side.
   A. Right
   B. Left
   C. 2 bits right
   D. 2 bits left
5. The C program should have at least _____ function.
   A. 1
   B. 2
   C. 3
   D. 0
6. What will be the output of following program:

```
main()
{
  int i = 3;
  {
    int i = 5, j = 6;
     printf("%d %d", i, j);
  }
  printf("%d %d", i, j);
}
```

A. 3525
B. 3656
C. 5363
D. 3355

7. What will be the output of the following program:

```
main()
{
  printf ("\\n hi");
  printf ("\\t hello");
  printf ("\\" all");
}
```

A. hi   hello" all
B. hihello"all
C. hi hello"all
D. hi hello" all

8. The _____ is basic data type.
   A. Pointer
   B. Structure
   C. Array
   D. float

9. Character data type has _____ range.
   A. -128 to +127
   B. -127 to +128
   C. -129 to +128
   D. -127 t0 +129

10. _____ is not the C Keyword.
    A. struct
    B. int
    C. long
    D. medium

11. To print decimal, hexadecimal or octal integer value which conversion character conversion is used?
    A. h
    B. d
    C. i
    D. x

12. %= is example for which operator?
    A. Comparison
    B. Logical
    C. Assignment
    D. Relational

13. Which functions returns a value?
    A. main( )
    B. void main( )

C. int main( )

D. int( )

14. Function that transmits only single character from the standard output device.

  A. printf( )

  B. puts( )

  C. putchar( )

  D. putc( )

15. A ternary operator, operates on _____ operands.

  A. one

  B. tro

  C. multiple

  D. three

16. N=10; N++; Select the Correct Output.

  A. 10

  B. 11

  C. 9

  D. -11

17. Sum=+20, can also be written as.

  A. sum=sum+sum

  B. Sum=20+sum

  C. sum=sum+20

  D. Invalid Syntax]

18. The logical operator OR is defined as-

  A. True when all the condition true

  B. True when it converts true to false

  C. True when at least one condition is true

  D. Converts false to true &true to false

19. The operator << works as.

  A. Or

  B. Not

  C. Right shift

  D. Left shift

20. Which of the following is not a relational operator in C?

  A. >

  B. ==

  C. ||

  D. !=

21. What are types of Functions in C Language?

  A. Library Functions

  B. User Defined Functions

C. Both Library and User Defined

D. Customized

22. . What is the output of C Program.?

```
int main()
{   int a=9, b=5, c=8;
   if(!(a==9))
   {
      printf("Bear\n");
   }
   else
   {
      printf("Elephant\n");
   }
      printf("Fox");
   return 0; }
```

A. Bear Fox

B. Elephant Fox

C. Fox

D. Compiler error

23. What will be the data type returned for the following C function?

```
#include
int func()
{
return (double)(char)5.0;
}
```

A. int

B. double

C. char

D. string

24. What is the output of this C code?

```
int main()
{
   int a = 2;
   if (a >> 1)
      printf("%d\n", a);
}
```

A. 0

B. 1

C. 2

D. 4

25. The default parameter passing mechanism is?

A. call by value

B. call by reference

C. call by value result

D. call by data

26. The _____ is used to break out of the case statements.

A. Continue

B. Break
C. Default
D. Case

27. A function is a subroutine that may include one or more _____ designed to perform a specific task.
    A. Function
    B. Statement
    C. Libraries
    D. Data types

28. What is the output of C Program.?

```
int main()
{
   int a=5, b=8;

   if( a==5 && (b=9) )
   {
      printf("Gorilla Glass=");
   }
   printf("%d %d", a, b);

   return 0; }
```

    A. 5 8
    B. 5 9
    C. Gorilla Glass=5 8
    D. Gorilla Glass=5 9

29. What is the output of C Program.?

```
int main()
{   int a=9, b=5, c=8;
   if(!(a==9))
   {
      printf("Bear\n");
   }
   else
   {
      printf("Elephant\n");
   }
      printf("Fox");
   return 0:}
```

    A. Bear Fox
    B. Elephant Fox
    C. Fox
    D. Compiler error

30. What is the output of the following code:

```
void myshow(int *);
void main()
   I {nt a=10;
   printf("%d ", a);
   myshow(&a);
   printf("%d", a);}
void myshow(int *k)
{
   *k=20;
```

A. 10 20
B. 20 20
C. 10 10
D. 10 20

31. An array Index starts with?

A. -1
B. 0
C. 1
D. 2

32.What is the output of C Program.?

```
int main()

{

int a[];

a[4] = {1,2,3,4};

printf("%d", a[0]);

}
```

A. 1
B. 2
C. 4
D. Compile error

33. What is the output of C Program?

```
int main()

 {

char grade[] = {'A','B','C'};

printf("GRADE=%c, ", *grade);

printf("GRADE=%d", grade);

}
```

A) GRADE=some address of array, GRADE=A

B) GRADE=A, GRADE=some address of array

C) GRADE=A, GRADE=A

D) Compiler error

34. An entire array is always passed by ___ to a called function.

A) Call by value

B) Call by reference

C) Address relocation

D) Address restructure

35. How do you initialize an array in C?

A. int arr[3] = (1,2,3);
B. int arr(3) = {1,2,3};
C. int arr[3] = {1,2,3};
D. int arr(3) = (1,2,3);

36. Assuming int is of 4bytes, what is the size of int arr[15];?

   A. 15
   B. 19
   C. 11
   D. 60

37. Elements in an array are accessed _____

A. randomly
B. sequentially
C. exponentially
D. logarithmically

38. When does the ArrayIndexOutOfBoundsException occur?

A. Compile-time
B. Run-time
C. Not an error
D. Not an exception at all

39. What is the output of the following Java code?

public class array

```
{

        public static void main(String args[])

        {

                int []arr = {1,2,3,4,5};

                System.out.println(arr[5]);

        }

}
```

A. 4
B. 5
C. ArrayIndexOutOfBoundsException
D. InavlidInputException

40. What will be the output of the program ?

int main()

{

enum days {MON=-1, TUE, WED=6, THU, FRI, SAT};

printf("%d, %d, %d, %d, %d, %d\n", MON, TUE, WED, THU, FRI, SAT);

return 0;

}

A. -1, 0, 1, 2, 3, 4
B. -1, 2, 6, 3, 4, 5
C. -1, 0, 6, 2, 3, 4
D. -1, 0, 6, 7, 8, 9

41. What will be the output of the program ?

int main()

{

enum status {pass, fail, absent};

enum status stud1, stud2, stud3;

stud1 = pass;

stud2 = absent;

stud3 = fail;

printf("%d %d %d\n", stud1, stud2, stud3);

return 0;

}

A. 0, 1, 2
B. 1, 2, 3
C. 0, 2, 1
D. 1, 3, 2

42. What will be the output of the program in Turbo C (under DOS)?

int main()

{

struct emp

{

char *n;

int age;

};

struct emp e1 = {"Dravid", 23};

struct emp e2 = e1;

strupr(e2.n);

printf("%s\n", e1.n);

return 0;

}

A. Error: Invalid structure assignment
B. DRAVID
C. Dravid
D. No output

43. What will be the output of the program in 16-bit platform (under DOS)?

int main()

{

```
struct node
{
int data;
struct node *link;
};
struct node *p, *q;
p = (struct node *) malloc(sizeof(struct node));
q = (struct node *) malloc(sizeof(struct node));
printf("%d, %d\n", sizeof(p), sizeof(q));
return 0;
}
```
A. 2, 2
B. 8, 8
C. 5, 5
D. 4, 4

44. What will be the output of the program ?
```
int main()
{
struct byte
{
int one:1;
};
struct byte var = {1};
printf("%d\n", var.one);
return 0;
}
```
A. 1
B. -1
C. 0

D. Error

45. Which of the following statements correct about the below code?

maruti.engine.bolts=25;

A. Structure bolts is nested within structure engine.
B. Structure engine is nested within structure maruti
C. Structure maruti is nested within structure engine
D. Structure maruti is nested within structure bolts.

46. Number of bytes in memory taken by the below structure is?

Struct test

{

int k;

char c;

};

A. Multiple of integer size
B. integer size+character size
C. Depends on the platform
D. Multiple of word size

47. Size of a union is determined by size of the

A. First member in the union
B. Last member in the union
C. Biggest member in the union
D. Sum of the sizes of all members

48. What is the output of this C code?

(Assuming size of int be 4)

struct temp

{

int a;

int b;

int c;

} p[] = {0};

main()

{ printf("%d", sizeof(p));

}

A. 4
B. 12
C. 16
D. Can't be estimated due to ambigous initialization of array

49. The declaration of structure is also called as?

A. structure creator
B. structure signifier
C. structure specifier
D. structure define

50.. What is the output of C Program.? int main() { int a[] = {1,2,3,4}; int b[4] = {5,6,7,8}; printf("%d,%d", a[0], b[0]); }

A) 1,5

B) 2,6

C) 0 0

D) Compiler error

Q1.A _____ is a program in execution.

   a. Process

   b. Thread

   c. Application

   d. Software

Q2.User Threads

   a. are supported above the kernel and are managed without the kernel support

   b. are supported below the kernel and are managed without the kernel support

   c. are supported above the kernel and are managed with the kernel support

   d. are supported below the kernel and are managed with the kernel support

Q.3 When a thread needs to wait for an event it will

   a. Block

   b. Execute

   c. Terminate

   d. Update

Q.4 In a pure Kernel Level Thread facility all of work of thread management is done by the

   a. Application

b. Program

c. Kernel

d. Threads

Q.5 In many to one multithreading model many user level threads are attached to

a. one register

b. operating system

c. one kernel thread

d. other threads

Q.6 The kernel dispatcher keeps track of all ready

a. Systems

b. Registers

c. Threads

d. Buffers

Q.7 Event for which a thread block occurs the thread is moved to the ready

a. Buffer

b. Memory

c. Registers

d. Queue

Q.8 Message passing system allows processes to _____

a. communicate with one another without resorting to shared data

b. communicate with one another by resorting to shared data

c. share data

d. name the recipient or sender of the message

Q.9 Which of the following two operations are provided by the IPC facility?

a. write & delete message

b. delete & receive message

c. send & delete message

d. receive & send message

Q.10 What is SJF algorithm?

a. first executes the job that came in last in the queue

b. first executes the job that came in first in the queue

c. first executes the job that needs minimal processor

d. first executes the job that has maximum processor needs

Q. 11 The process _____ is the set of logical addresses that a process references in its code.

a. Zone

b. Area

c. Mapping

d. Address Space

Q. 12 Main Memory refers to a_____ memory that is the internal memory to the computer

a. virtual

b. physical

c. short

d. flash

Q.13----------------occurs in a dynamic memory allocation system when most of the free blocks are too sm

a. Fragmentation

b. Detection

c. Looping

d. Swapping

Q.14 A _____ is the data structure used by a virtual memory system

a. Page Table

b. Track

c. Sector

d. Partition

Q. 15 A Page Table is to store the mapping between _____address and physical addresses.

a. main

b. external

c. internal

d. virtual

Q.16 Segmentation allows breaking of the virtual address space of a single process into
_____

a. pages

b. segments

c. partition

d. block

Q.17 _____ is a unique tag, usually a number identifies the file within the file system.

a. File identifier

b. File name

c. File type

d. File space

Q.18 What is the mounting of file system?

a. creating a file system

b. deleting a file system

c. attaching portion of the file system into a directory structure

d. removing the portion of the file system into a directory structure

Q.19 Mapping of file is managed by _____

a. file metadata

b. virtual memory

c. page table

d. file system

Q.20 Mapping of network file system protocol to local file system is done by _____

a. network file system

b. local file system

c. volume manager

d. remote mirror

Q 21. ___ are used widely in computer architecture and vary in their signaling methods, speed, throughput, and connection methods

a. bus

b. card

c. interface

d. connector

Q 22. Connects physical device to system bus like Minicomputers, PCs,etc

a. wired

b. driver

c. device controller

d. device connection

Q 23. A ___ module controls exchange of data between I/O module and main memory

a.DMA

b.RMA

c.DDA

d.RAM

Q 24. In polling _____ cycle is used wait for I/O from device

    a. WAIT-BUSY

    b. BUSY-WAIT

    c. STOP-WAIT

    d. WAIT-STOP

Q 25. The processor issues an I/O command and continues to execute in which of the following
    a. programmed i/o polling

    b. interrupt-driven i/o

    c. character-driven i/o

    d. direct memory access

Q 26. The number of processes and the number and kind of resources possessed and requested are
    unimportant ,This result holds for any kind of resource, including both hardware and software.
    This kind of deadlock is called _____

    a. memory deadlock

    b. hardware deadlock

    c. resource deadlock

    d. exclusive deadlock

Q 27. If no cycles exist, the system is _____

    a. deadlocked

    b. not deadlocked

    c. waiting

d. locked

Q 28. Deadlocks can occur when processes have been granted exclusive access to.

a. resources
b. data

c. memory
d. component

Q 29. ____ resource is one that can be taken away from the process owning it with no ill effects
a. preemtable

b. non preemtable

c. preserve

d. reserve

Q 30. Potential deadlocks that involve preemptable resources can usually be resolved by_____

a. allocating resources

b. deallocating resources

c. reallocating resources

d. locking resources

Q 31. Virtualization manager, program that allows multiple operating systems to share a single hardware host also refer as
a. hypermachine

b. hypervisor

c. hyperenvironment

d. hyperos

Q 32. Modern operating systems nearly all support virtual memory, which is basically refer as
a. mapping of memory

b. mapping of pages

c. mapping of disk

d. mapping of cache

Q 33. _____is set in motion by having the operating system set a control register in the CPU that points to the top-level page table
    a. paging

    b. caching

    c. mapping

    d. virtualizing

Q 34. _____ is software assisted virtualization technique that uses specialized APIs to link virtual machines with the hypervisor to optimize their performance
    a. virtualization

    b. paravirtualization

    c. swapvirtualization

    d. distributing system

Q 35. The customers get a complete package that actually works, completely independent of which operating system they are running and which other software, packages, and libraries they have installed. These "shrink-wrapped" virtual machines are often called
    a. virtual disk

    b. virtual machine

    c. virtual appliances

    d. virtual device

Q 36.The Microkernel Type 1 Hypervisor, hosts its drivers on the _____
    a. base partition

    b. virtual partition

    c. parent partition

    d. child partition

Q 37. All modern x86 CPUs include a ___ and a ___ to optimize virtual memory performance
    a. MUM,TBL

    b. MMU,TLB

    c. MEM,TLB

    d. MMU,TBL

Q.38 _____ handles virtual-to-physical translations as defined by the OS
    a. memory management unit

    b. translation lookaside buffer

    c. page management

    d. paging

Q.39 Multicore virtualization method to allow hardware designers to get an abstraction of the _____ details of the processor cores
    a. high-level

    b. low-level

    c. neutral

    d. no access

Q.40_____use a physical hierarchy of two or more cache levels that statically determine the cache alloca and mapping

a. chip multiprocessor

b. chip singleprocessor

c. chip physical memory

d. chip logical memory

Q 41.Applications interact with the operating system through calls to libraries provided by it, which together
compose the Android _____.

a. Library

b. Collection

c. Framework

d. Package

Q 42.The _____ manager rides herd on power usage throughout the system.

a. Power

b. Electric

c. Battery

d. Cell

Q 43._____ OS specifically designed for smartphones and tablet computers

a. Android

b. Raspberry pi

c. Ubuntu

d. Fedora

Q 44.DVM stands for

a. Java VM

b. Dalvik VM

c. Jam VM

d. Hotspot

Q 45. There are _____ layers in Binder IPC Architecture in android

a. 2

b. 4

c. 6

d. 3

Q 46. Android Interface Definition Language is a _____ tool

a. Interpreter

b. GUI Interface

c. Interface compiler

d. Programing language

Q 47. UID zero represent _____ user in android

a. root

b. group

c. guest

d. anonymous

Q 48. In Linux OS the command line interface is called as _____

a. cmd

b. shell

c. prompt

d. terminal

Q 49.The heart of Linux implementation of threads is a new system call _____ which is not present in any other version of UNIX

a. create()

b. fork()

c. clone|()

d. exec()

Q 50._____ command search a file for some pattern

a. cat

b. grep

c. cp

d. cut

1. Communication is a non-stop_____.
   a. paper
   b. process
   c. programme
   d. plan
2. Communication is a part of _____ skills.
   a. soft
   b. hard
   c. rough
   d. short
3. The _____ is the person who transmits the message
   a. receiver
   b. driver
   c. sender
   d. cleaner
4. _____ is the person who notices and decodes and attaches some meaning to a message
   a. receiver
   b. driver
   c. sender
   d. cleaner
5. Message is any signal that triggers the response of a _____
   a. receiver
   b. driver
   c. sender
   d. cleaner
6. The response to a sender's message is called _____
   a. food bank
   b. feedback
   c. feeding
   d. fooding
7. _____ context refers to the relationship between the sender and the receiver
   a. social
   b. physical
   c. cultural
   d. chronological
8. _____ context refers to the similarity of backgrounds between the sender and the receiver.
   a. chronological
   b. social
   c. physical
   d. cultural
9. _____ refers to all these factors that disrupt the communication.
   a. nonsense
   b. noise
   c. nowhere
   d. nobody
10. Environmental barriers are the same as _____ noise.

a. physiological
b. psychological
c. physical
d. sociological

11. Our dress code is an example of _____ communication.
    a. verbal
    b. nonverbal
    c. written
    d. spoken

12. Communication strengthens _____ & _____ relationship is an organization.
    a. employer-father
    b. employer-employer
    c. mother-employer
    d. mother-child

13. _____ communication includes tone of voice body language, facial expressions etc.
    a. non verbal
    b. verbal
    c. letter
    d. noise

14. When there is similarity of background between the sender and the receives such as age, language nationality, religion, gender then this is called _____ context.
    a. social
    b. cultural
    c. physical
    d. dynamic

15. Letter, e-mail telephone are examples of _____
    a. message
    b. feedback
    c. channel
    d. encoding

16. A shorter report is considered to be as
    a. 1-5 pages
    b. 3-5 pages
    c. 4-5 pages
    d. 2 pages

17. A list of illustration, included, figures and tables, placed on Abstract
    a. Vision
    b. Title Page
    c. Table Content
    d. Bottom Line

18. Format written in formal and oral communication, termed as
    a. Manuscript Speech
    b. Commencement Speech
    c. Memorized Speech
    d. Verbal Language Processing

19. Which of these is usually written in a form of a memorandum?
    a. Informal reports
    b. Formal reports

c. Professional reports
d. Business reports

20. Which of these is not a formal report?
    a. Informational
    b. Informal
    c. Interpretative
    d. Routine

21. Into which of these types are formal reports not classified?
    a. Informational
    b. Interpretative
    c. Oral
    d. Routine

22. Which of these reports provide information without any evaluation?
    a. Informational
    b. Interpretative
    c. Routine
    d. Progress

23. Interpretative reports are also known as _____
    a. recommendation reports
    b. routine reports
    c. progress reports
    d. informal reports

24. Which of these is not mentioned in a resume?
    a. Culture
    b. Age
    c. Nationality
    d. Experience

25. The ….. of a business letter is called layout.
    a. body
    b. content
    c. pattern
    d. conclusion

26. Effective professional correspondence uses an appropriate style, clear and concise language, and…….
    a. the passive voice
    b. open punctuation
    c. the active voice
    d. mixed punctuation

27. How many references are usually given in a resume?
    a. Two
    b. Three
    c. Four
    d. Five

28. Resume is a _____ word.
    a. French
    b. German
    c. Indian
    d. American

29. Curriculum vitae is a _____ word.
    a. French

b. German
c. Indian
d. Latin

30. _____ gives input into right strategic decision making
    a. Public relation officer
    b. Corporate communicator
    c. Sales manager
    d. Marketing manager

31. In current times, there is greater demand for _____
    a. Policies of variation
    b. Policies of consistency
    c. Policies of heterogeneity
    d. Policies of discrepancy

32. _____ is a management framework to guide and coordinate marketing communication and public relations
    a. Corporate strategy
    b. Corporate communication
    c. Corporate marketing
    d. Corporate relations

33. Despite consolidation of various communication disciplines, some units like _____ are seen as a separate functional area
    a. Media relations
    b. Corporate responsibility
    c. Finance
    d. Crisis management

34. Crisis management is the work of _____ professionals
    a. Public Relations
    b. IT
    c. FMCG
    d. Marketing

35. Public Relation professionals often need to ____
    a. Lie
    b. Multitask
    c. Sell
    d. Hire

36. _____ is different from direct advertising and is used by many brands that sell alcohol
    a. Step advertising
    b. Surrogate advertising
    c. Adopted advertising
    d. Foster advertising

37. _____ is an exclusive right granted by a sovereign state for an invention.
    a. Patent
    b. Copyright
    c. Surrogate
    d. Creative right

38. _____ is an intellectual property right created by a work of art
    a. Patent
    b. Copyright
    c. Surrogate

    d. Creative right
39. Which on of the following is often the first step of plannig the presentation
    a. Brainstorming ideas and writing them down
    b. Make sense of the audience
    c. Prepare PPT
    d. Dress up well
40. The basic concept behind_____is to cpture ideas as quickly as possible.
    a. Writing down ideas
    b. Brainstorming
    c. Judgement of topic
    d. Capture the ideas
41. In planning of presentation importance of brainstorming is____(Choose the correct option)
    a. Think critically
    b. delivering the presentation
    c. Brainwash of negativity
    d. Solving problems and coming up with new ideas
42. To whom should a presentation be aimed?
    a. The highest authority in the room, regardless of where they are
    b. The entire audience
    c. The people in the closest rows
    d. Your best friend in the room
43. Why should you keep text to a minimum on slides?
    a. So the focus is on you as the speaker
    b. To help make your presentation longer
    c. So the pictures are easier to see
    d. To make sure the audience can read everything you have to tell them
44. Your presentation should consist of title slide, _____, body, and _____.
    a. objects and summary
    b. opinions and paragraphs
    c. objectives and summary
    d. options and pages
45. Which one of the following is not the brainstorming rule
    a. Defer judgment
    b. one conversation at a time
    c. Be visual
    d. Concentrate on Bod language
46. Brainstorming can be a great_____where you have shared discussions and also for individual ideation
    a. Team building
    b. Conflict resolution
    c. presentation
    d. Ethics
47. Which one of the following term is irrelevant to brainstorming
    a. problem solving
    b. Project Management
    c. Improves
    d. Audio visual equipment's
48. Which of the following statements about brainstorming is NOT correct?
    a. Brainstorming is an open game without rules or guidelines.

b. Brainstorming is often used for creative problem solving.
c. All participants in brainstorming should be given a chance to contribute to the process.
d. No criticism is allowed in brainstorming.

49. In the beginning of the brainstorming session preparing a chart will help to
    a. Give summary of the presentation
    b. Heading and sub sections of the content
    c. Chart is useless
    d. shows references

50. Which is the NOT the role of facilitator in brainstorming.
    a. Keep the session on track
    b. Record all the information
    c. Document the information
    d. Observe the presentation

Sample Question Bank
Prof. Suman Upadhyay
Regular Examination
BScIT
SEM-I
DISCRETE MATHEMATICS

1) The set O of odd positive integers less than 10 can be expressed by _____
a) {1, 2, 3}
b) {1, 3, 5, 7, 9}
c) {1, 2, 5, 9}
d) {1, 5, 7, 9, 11}

2) Power set of empty set has exactly _____ subset.
a) One
b) Zero
c) Two
d) Three

3) Express {x: x= n/ (n+1), n is a natural number less than 7} in roster form.
   a) {$\frac{1}{2}$, $\frac{2}{3}$, $\frac{4}{5}$, $\frac{6}{7}$}
   b) {$\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{5}$, $\frac{5}{6}$, $\frac{6}{7}$, $\frac{7}{8}$}
   c) {$\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{5}$, $\frac{5}{6}$, $\frac{6}{7}$}
   d) Infinite set

4) Number of power set of {a, b}, where a and b are distinct elements.
   a) 3
   b) 4
   c) 2
   d) 5

5) The set difference of the set A with null set is _____
   a) A
   b) null
   c) U
   d) B

6) If n(A)=20 and n(B)=30 and n(A U B) = 40 then n(A ∩ B) is?
   a) 20
   b) 30
   c) 40
   d) 10

7) Let P: I am in Delhi.; Q: Delhi is clean.; then q ∧ p(q and p) is?
   a) Delhi is clean and I am in Delhi
   b) Delhi is not clean or I am in Delhi
   c) I am in Delhi and Delhi is not clean
   d) Delhi is clean but I am in Mumbai

8) Let P: This is a great website, Q: You should not come back here. Then 'This is a great website and you should come back here.' is best represented by?
   a) ~P V ~Q
   b) P ∧ ~Q
   c) P V Q
   d) P ∧ Q

9) What is the converse of the conditional statement "If it ices today, I will play ice hockey tomorrow."
   a) "I will play ice hockey tomorrow only if it ices today."
   b) "If I do not play ice hockey tomorrow, then it will not have iced today."
   c) "If it does not ice today, then I will not play ice hockey tomorrow."
   d) "I will not play ice hockey tomorrow only if it ices today."

10) What are the inverse of the conditional statement "If you make your notes, it will be a convenient in exams."
    a) "If you make notes, then it will be a convenient in exams."
    b) "If you do not make notes, then it will not be a convenient in exams."
    c) "If it will not be a convenient in exams, then you did not make your notes."
    d) "If it will be a convenient in exams, then you make your notes

11) Let P (x) denote the statement "x >7." Which of these have truth value true?
    a) P (0)
    b) P (4)
    c) P (6)
    d) P (9)

12) "The product of two negative real numbers is not negative." Is given by?
    a) ∃x ∀y ((x < 0) ∧ (y < 0) → (xy > 0))
    b) ∃x ∃y ((x < 0) ∧ (y < 0) ∧ (xy > 0))
    c) ∀x ∃y ((x < 0) ∧ (y < 0) ∧ (xy > 0))
    d) ∀x ∀y ((x < 0) ∧ (y < 0) → (xy > 0))

13) The greatest common divisor of 12 and 18 is?
    a) 2
    b) 3
    c) 4
    d) 6

14) The quotient when 19 is divided by 6 is?
    a) 1
    b) 2
    c) 3
    d) 0

15) A floor function map a real number to _____
    a) smallest previous integer
    b) greatest previous integer

c) smallest following integer

d) greatest following integer

16) Floor(2.4) + Ceil(2.9) is equal to _____

    a) 4

    b) 6

    c) 5

    d) 10

17) Let Q(n) be the predicate "n is a factor of 8." What is the truth set of Q(n) if the domain of n is the set of all positive integers?

a) $\{2, 4\}$

b) $\{2, 4, 8\}$

c) $\{1, 2, 4, 8\}$

d) $\{-8, -4, -2, -1, 1, 2, 4, 8\}$

18) Which of the following is false?

a) The product of any two odd integers is odd.

b) The difference of any two odd integers is odd.

c) The difference of any two even integers is even.

d) The product of any two even integers is even.

19) How many quantifiers are there in mathematical logic?

a) 2

b) 3

c) 4

d) 5

20) Which of the following is not the valid argument forms?

a) Modus Ponens

b) Modus Tollens

c) Converse Error

d) Transitivity

21) In the principle of mathematical induction, which of the following steps is mandatory?

    a) induction hypothesis

    b) inductive reference

    c) induction set assumption

    d) minimal set representation

22) For every natural number k, which of the following is true?

    a) $(mn)^k = m^k n^k$

    b) $m*k = n + 1$

    c) $(m+n)^k = k + 1$

    d) $m^k n = mn^k$

23) Which of the following function f: Z X Z $\rightarrow$ Z is not onto?

    a) $f(a, b) = a + b$

    b) $f(a, b) = a$

    c) $f(a, b) = |b|$

    d) $f(a, b) = a - b$

24) Let f and g be the function from the set of integers to itself, defined by $f(x) = 2x + 1$ and $g(x) = 3x + 4$. Then the composition of f and g is _____

    a) 6x + 9

    b) 6x + 7

c) $6x + 6$

d) $6x + 8$

25) For the sequence $a_n = 6. (1/3)^n$, a_4 is _____

a) 2/25

b) 2/27

c) 2/19

d) 2/13

26) What is the base case for the inequality $7^n > n^3$, where n = 3?

a) 652 > 189

b) 42 < 132

c) 343 > 27

d) 42 <= 431

27) A formula developed in which every previous term is used to define the next term, is called

a) explicit

b) induction

c) recursive

d) countable

28) For A = {1,2,3,4} and B = {1,2,3,4} the function, f = {(1,1), (23), (3,4), (4,2)} is

a) One- one

b) Onto

c) Neither one-one nor onto

d) Both one –one and onto

29) The sum of the series $1 + (1/3) + (1/3^2) + (1/3^3) +$……

a) 2

b) 3/2

c) 2/3

d) 4/3

30) The function f : R → R defined by f(x) = 3 – 4x is

a) Onto

b) Not onto

c) Not one-one

d) Not bijective

31)

A relation on a set A is a relation from _____ to _____.

a) A; B

b) A; A

c) B; B

d) B; A

32) The congruence modulo 2 relation E is defined from Z to Z as follows:

For all integers m and n, $mEn \iff m - n$ is even.

Which of the following is true?

a) $5E2$

b) 3E0

c) -1E7

d) 4E1

33)

To show that a relation R on an infinite set A is symmetric, you suppose that _____ and you show that _____.

a) x and y are any elements of A such that x R y; y R x

b) x is any element of A; x R x
c) x, y, and z are any elements of A such that xRy and y R z; x R z
d) for all x and y in A, if xRy then yRx

34) To show that a relation R on an infinite set A is transitive, you suppose that _____ and you show that _____.

a) x, y, and z are any elements of A such that xRy and y R z; x R z
b) x and y are any elements of A such that x R y; y R x
c) x is any element of A; x R x
d) for all x, y, and z in A, if xRy and yRz then xRz

35) Determine the partitions of the set {3, 4, 5, 6, 7} from the following subsets.
a) {3,5}, {3,6,7}, {4,5,6}
b) {3}, {4,6}, {5}, {7}
c) {3,4,6}, {7}
d) {5,6}, {5,7}

36) Determine the set of all integers a such that a ≡ 3 (mod 7) such that −21 ≤ x ≤ 21.
a) {−21, −18, −11, −4, 3, 10, 16}
b) {−21, −18, −11, −4, 3, 10, 17, 24}
c) {−24, -19, -15, 5, 0, 6, 10}
d) {−23, −17, −11, 0, 2, 8, 16}

37) A trail in a graph can be described as _____
a) a walk without repeated edges
b) a cycle with repeated edges
c) a walk with repeated edges
d) a line graph with one or more vertices

38) An n-vertex graph has _____ edges.
a) n^2
b) n-1
c) n*n
d) n*(n+1)/2

39) Degree of a graph with 12 vertices is _____
a) 25
b) 56
c) 24
d) 212

40) In a finite graph the number of vertices of odd degree is always _____
a) even
b) odd
c) even or odd
d) infinite

41)
If A and $\bar{A}$ are complementary events, then P($\bar{A}$) = ……….
a) 1+P(A)
b) 1-P(A)

c) P(A)

d) − P(A)

42) If A and B are independent events then, conditional probability P(A/B) = ……….
   a) P(A)-P(B)
   b) P(A)
   c) P(B)
   d) P(A)+P(B)

43) A statistical experiment means ……….
   a) Action which has reaction
   b) Action which has a certain outcome
   c) Action which has no outcome
   d) Action which has uncertain outcome

44) Two events are said to be mutually exclusive when ……….
   a) Both of them occur together
   b) None of them occur
   c) Occurrence is uncertain
   d) Only one them occurs

45)
A bag contains 3 copper coins and 7 silver coins. If a coin is drawn, then the chance to get a silver coin is ……….
   a) 7/3
   b) 3/7
   c) 7/10
   d) 3/10

46) A variable x capable of taking values x1, x2, x3, ……, xn with respective probabilities p1, p2, p3, ….. , pn then it is called ……….
   a) Continuous random
   b) Continuous
   c) Discrete random variable
   d) Discrete

47) There are 12 points in a plane, no three of which are collinear. Find a) How many straight lines can be drawn? b) How many triangles can be drawn?
   a) 12, 3
   b) 12, 2
   c) 66, 220
   d) 132, 220

48) At an election there are 5 candidates and 3 members are to be elected and a voter is entitled to vote for any number to be elected but not more than members to be elected. In how many ways a voter can cast his vote?
a) 15
b) 20
c) 25
d) 30

49)

Suppose P(A|B) = 1/2 and P(A ∩ B) = 1/6. What is P(B)?

a) 3
b) 1/6
c) ½
d) 1/3

50) A drawer contains ten black and ten white socks. You reach in and pull some out without looking at them. What is the least number of socks you must pull out to be sure to get a matched pair?

a) 1
b) 2
c) 3
d) 4

Sample Question Bank

Asst. Prof. Mithilesh Chauhan

Regular Examination

BScIT SEM-I

Subject: Digital Electronics

1. The number 23 is Hexadecimal number. Convert it in binary.
   A. 111111
   B. 101011
   C. 100011
   D. 100010

2. The number 10101010010110 is binary. Convert it in hexadecimal.
   A. 2A96
   B. 10101010010110
   C. ABA2
   D. AA52

3. The number 134 is octal number. Convert it in Hexadecimal.
   A. 43
   B. 5C
   C. C5
   D. 512

4. The number ABCD is Hexadecimal number. Convert it in binary.
   A. 1010001111001101
   B. 1010101111001101
   C. 1011111011110001
   D. 1111101111001101

5. The number 10101001 is binary. Covert it to gray code.

   A. 11001101
   B. 11111100
   C. 11111101
   D. 10101011

6. The hamming code for 1001 using even parity is _____.
   A. 0011111
   B. 0011001
   C. 1101011
   D. 1001100

7. Hamming code 1110001 has error on _____ position. Use odd parity.

A. 1
B. 3
C. 2
D. No error

8. ASCII is _____ bit code.
   A. 5
   B. 4
   C. 7
   D. 9

9. ASCII of character '1' is _____.
   A. 48
   B. 51
   C. 49
   D. 50

10. ASCII of character 'a' is _____.
   A. 97
   B. 65
   C. 48
   D. 49

11. AND gate has _____ inputs and 1 output.

   A. N>=1
   B. N>=2
   C. N>=3
   D. N>=4

12. In logic gates _____ alphabet is use to represent output.

   A. W
   B. X
   C. Y
   D. Z

13. The output of a two-input AND gate is high

   A. Only if both the inputs are high
   B. Only if both the inputs are low
   C. Only if one input is high and the other is low
   D. If at least one input is low

14. The output of two-input NOR gate is high

   A. Only if both the inputs are high
   B. Only if both the inputs are low
   C. Only if one input is high and the other is low
   D. If at least one input is high

15. Which of the following is applicable to AND gate?

A. Y=A+B
B. Y=A-B
C. Y=A.B
D. Y=A/B

16. Which of the following is not valid for AND gate?

A. Y=AB
B. Y=A.B
C. Y=A AND B
D. Y=A*B

17. _____ is invert of AND gate.

A. NOT
B. OR
C. NAND
D. NOR

18. Which of the following is applicable to NOR gate?

A. Y=$\overline{A+B}$
B. Y=$\overline{A.B}$
C. Y=$\overline{A*B}$
D. Y=$\overline{A-B}$

19. A+0=_____.

A. A
B. A'(A bar)
C. 0
D. 1

20. A.0=_____

A. A
B. A'(A bar)
C. 0
D. 1

21. To design a binary to gray converter _____ gate is used.

A. AND
B. OR
C. NOR
D. XOR

22. To design a gray to binary converter _____ gate is used.

A. AND
B. OR
C. NOR
D. XOR

23. For converting binary to gray; binary bit added to next position _____ bit.

    A. Binary
    B. Gray
    C. X3
    D. BCD

24. Half adder can perform addition of _____ bits.

    A. 1
    B. 2
    C. 3
    D. 4

25. Half subtractor can perform subtraction of _____ bits.

    A. 1
    B. 2
    C. 3
    D. 4

26. Full subtractor can perform subtraction of _____ bits.

    A. 1
    B. 2
    C. 3
    D. 4

27. Using Full subtractor; if input A=1, B=0, and C=1 then difference =_____ and borrow= _____.(A is MSB)

    A. 0,0
    B. 0,1
    C. 1,0
    D. 1,1

28. In active low circuit ON=_____, OFF=_____.

    A. 0,1
    B. 1,0
    C. Both are same.
    D. There is no such circuit.

29. An 8 bit adder produces sum of _____ bits

    A. 2
    B. 4
    C. 8
    D. 16

30. A 8 bit adder can perform addition of _____.

A. 4 bits
B. Two numbers each of 8 bits
C. Two numbers each of 4 bits.
D. 8 bits

31. In multiplexer input to output routine is controlled by _____ lines.

    A. Control
    B. Data
    C. Select
    D. Current

32. Multiplexer is called _____.

    A. Data selector
    B. Data distributor
    C. Data creator
    D. Data destroyer

33. In there are 4 inputs in multiplexer then _____ OR gate/s will be used to design it.

    A. 1
    B. 2
    C. 4
    D. 0

34. In there are 4 inputs in multiplexer then _____ AND gate/s will be used to design it.

    A. 1
    B. 2
    C. 4
    D. 0

35. In 4:1 multiplexer, _____ select line will be used.

    A. 1
    B. 2
    C. 3
    D. 4

36. In design table if both rows are circled then we put logic _____.

    A. 0
    B. 1
    C. A
    D. A'

37. In design table if no rows are circled then we put logic _____.

A. 0
B. 1
C. A
D. A'

38. In design table if only top row is circled then we put logic _____.

A. 0
B. 1
C. A
D. A'

39. In demultiplexer input to output routine is controlled by _____ lines.

A. Control
B. Data
C. Select
D. Current

40. Demultiplexer is called _____.

A. Data selector
B. Data distributor
C. Data creator
D. Data destroyer

41. _____ is a type of counter.

A. Asynchronous
B. Digital
C. Analog
D. Register

42. _____ is a type of counter.

A. Digital
B. Synchronous
C. Analog
D. Register

43. In ripple counter last flip-flop becomes _____.

A. LSB
B. MSB
C. Worst
D. Best

44. To design modulo 10 counter _____ flip-flop are used.

A. 2
B. 4

C. 8
D. 10

45. If states in counter are 3,4,5,6,7 then it is a/an _____ counter.

A. Up
B. Down
C. Left
D. Right

46. _____ counter have problem of glitch.

A. Asynchronous
B. Synchronous
C. Register
D. Automatic

47. _____ counter has less settling time.

A. Asynchronous
B. Synchronous
C. Register
D. Automatic

48. Synchronous counter is _____.

A. Serial
B. Parallel
C. Horizontal
D. Vertical

49. Asynchronous counter is _____.

A. Serial
B. Parallel
C. Horizontal
D. Vertical

50. _____ counter has speed limitation.

A. Asynchronous
B. Synchronous
C. Register
D. Automatic