Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Question Paper

Schools of ML & AI / IT -N

First Semester, 2nd In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

ITN1101 Introduction to Computers

Time: 1 Hour

Max. Marks: 20

Instruction: Attempt All Questions.

Section – A

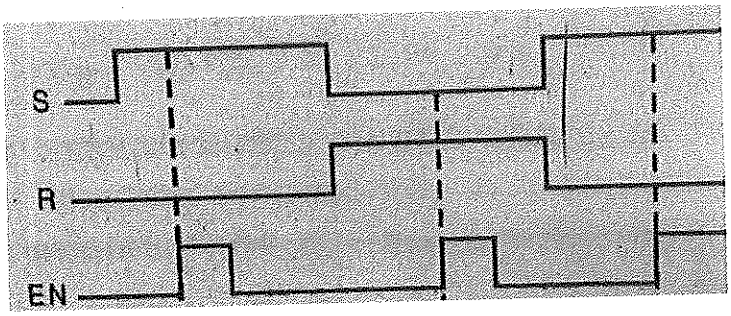
05 x 01 = 05 Marks

1. In 8085 micro-processor, which one of the following is the number of address lines?
   A) 4 B) 8 C) 16 D) 32
2. Which one of the following is the data size of 8085?
   A) 4 B) 8 C) 16 D) 32
3. Which one of the following is NOT true for the T FF?
   A) It is clocked B) it is un-clocked C) it has 1 input D) it toggles output
4. Which one of the following is the correct number of AND, OR and EX-OR gates required for a Full Adder?
   A) 1, 2, 2 B) 2, 1, 2 C) 3, 1, 2 D) 4, 0, 1
5. Which one of the following is not a type of memory?
   A) RAM B) FPROM C) EEPROM D) ROM

Section – B

03 x 02 = 06 Marks

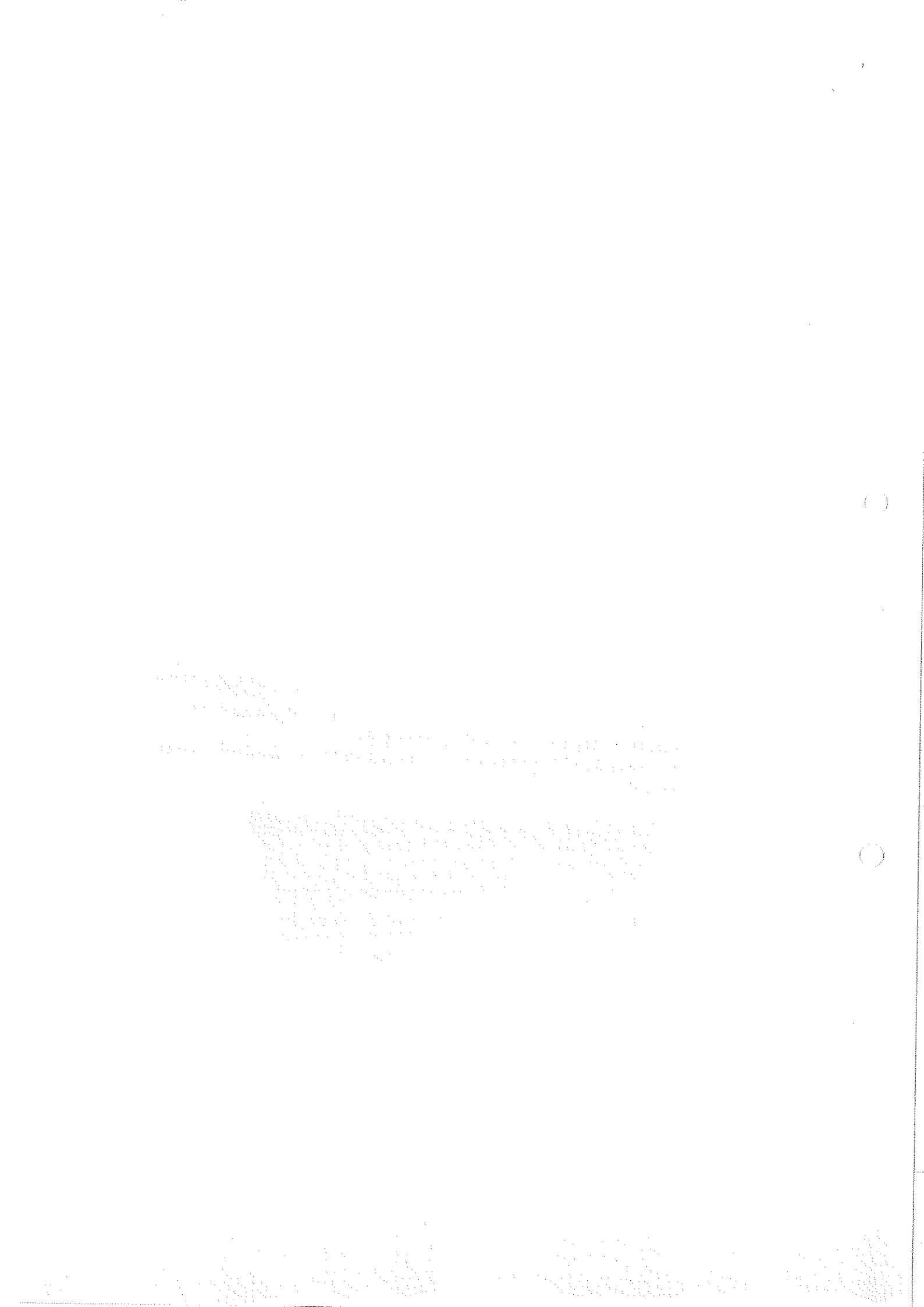
1. What is a Shift Register? Give the functions of the IR and PC Registers in 8085.
2. Give a neat block diagram of the 8051 Microcontroller.
3. The wave shapes for S, R and EN (Clk) for clocked SR FF are depicted below. Sketch the output at Q, which is initially low.



Section – C

03 x 03 = 09 Marks

1. Give the Truth Table, Logic diagram using NOR/OR gates and block diagram of a clocked SR FF.
2. List the differences between a microprocessor and microcontroller.
3. Discuss the difference between combinational and sequential circuits giving an example of each.



Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Solution

School of Machine Learning & Artificial Intelligence/ITN

First Semester, 2nd In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

ITN1101 Introduction to Computers **Time: 1 Hour**

Max. Marks: 20

Instruction: Attempt All Questions.

Section – A

05 x 01 = 05 Marks

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   A) 4 B) 8 C) 16 D) 32
   Answer: C
2. Which one of the following is the data size of 8085?
   A) 4 B) 8 C) 16 D) 32
   Answer: B
3. Which one of the following is NOT true for the T FF?
   A) It is clocked B) it is un-clocked C) it has 1 input D) it toggles output
   Answer: B
4. Which one of the following is the correct number of AND, OR and EX-OR gates are required for a full adder?
   A) 1, 2, 2 B) 2, 1, 2 C) 3, 1, 2 D) 4, 0, 1
   Answer: B
5. Which one of the following is not a type of memory?
   A) RAM B) FPROM C) EEPROM D) ROM
   Answer: C

Section – B

03 x 02 = 06 Marks

1. What is a Shift Register? Give the functions of the IR and PC Registers in 8085.
   Answer:
   A register that is designed to allow the bits of its contents to be moved to left or right.

   - **Instruction register** – It holds the instruction to be executed.
   - Program counter - It is a 16-bit register used to store the memory address location of the next instruction to be executed. Microprocessor increments the program whenever an instruction is being executed, so that the program counter points to the memory address of the next instruction that is going to be executed.

2. Give a neat block diagram of the 8051 Microcontroller.
   Answer:

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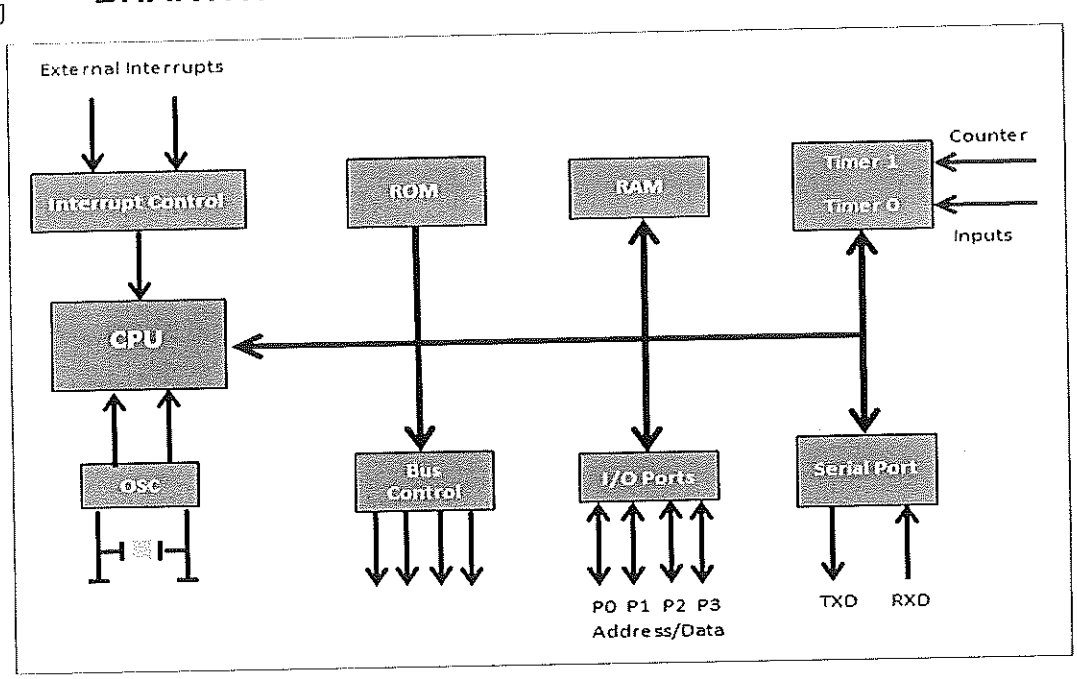
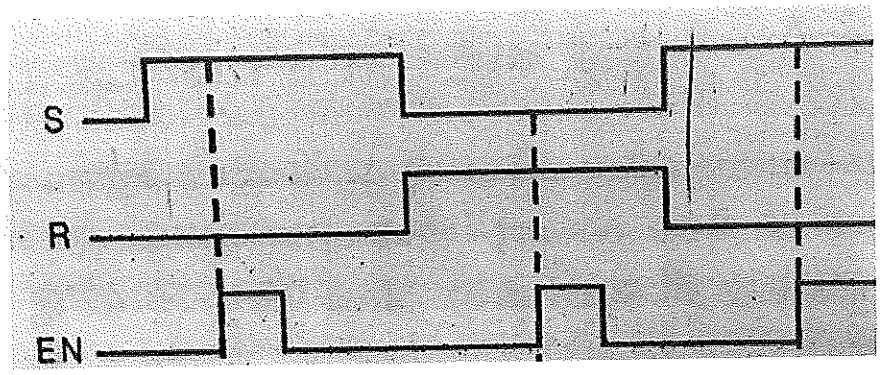


3. The wave shapes for S, R and EN (clk) for clocked SR FF are depicted below. Sketch the output at Q, which is initially low.



Section – C

03 x 03 = 09 Marks

1. Give the Truth Table, Logic diagram using NOR/OR gates and block diagram of a clocked SR FF.
2. List the differences between a microprocessor and microcontroller.

Answer:

Key difference in both of them is presence of external peripheral, where microcontrollers have RAM, ROM, EEPROM embedded in it while we have to use external circuits in case of microprocessors.

Microprocessor

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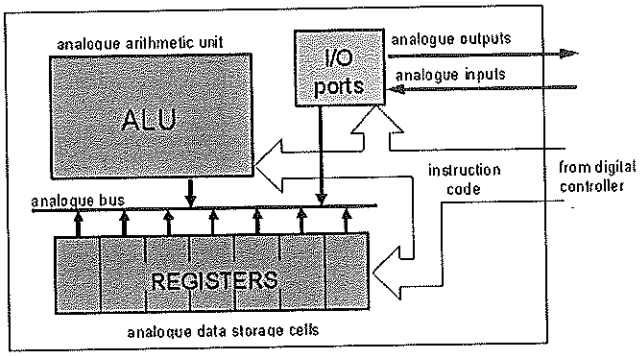
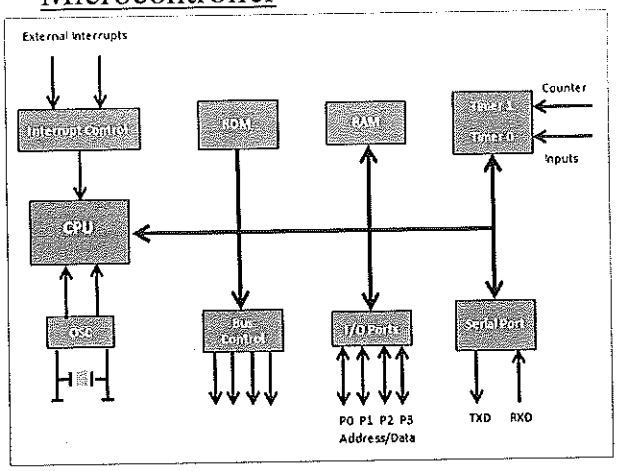


Microcontroller



3. Discuss the difference between combinational and sequential circuits with example.

Answer:

Combinational circuits are defined as the time independent circuits which do not depends upon previous inputs to generate any output are termed as combinational circuits. **Sequential circuits** are those which are dependent on clock cycles and depends on present as well as past inputs to generate any output.

Combinational Circuit –

1. In this output depends only upon present input.
2. Speed is fast.
3. It is designed easy.
4. There is no feedback between input and output.
5. This is time independent.
6. Elementary building blocks: Logic gates
7. Used for arithmetic as well as boolean operations.
8. Combinational circuits don't have capability to store any state.
9. As combinational circuits don't have clock, they don't require triggering.
10. These circuits do not have any memory element.
11. It is easy to use and handle.

Examples – Encoder, Decoder, Multiplexer, Demultiplexer

Block Diagram –

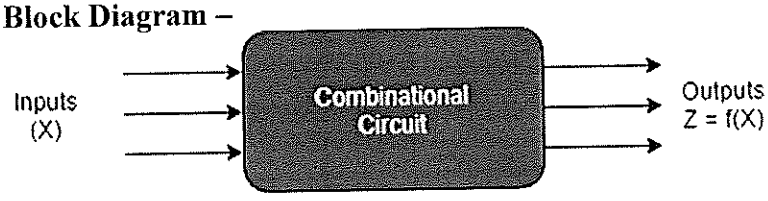


Figure: Combinational Circuits

Sequential Circuit –

1. In this output depends upon present as well as past input.
2. Speed is slow.
3. It is designed tough as compared to combinational circuits.
4. There exists a feedback path between input and output.
5. This is time dependent.
6. Elementary building blocks: Flip-flops
7. Mainly used for storing data.
8. Sequential circuits have capability to store any state or to retain earlier state.
9. As sequential circuits are clock dependent they need triggering.
10. These circuits have memory element.
11. It is not easy to use and handle.

Examples – Flip-flops, Counters

Block Diagram –

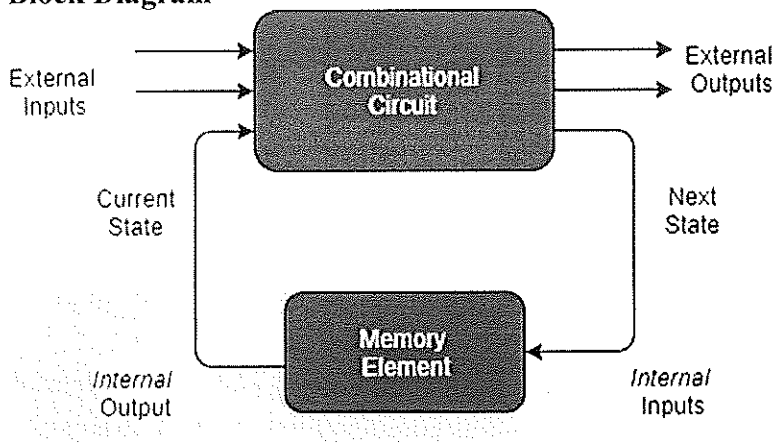


Figure: Sequential Circuit

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SCHOOL OF IT (Networking)

FIRST IN-SEMESTER EXAMINATION – 2018

SUMMER SEMESTER, B. VOC. PROGRAM

ITN1102 Computer Assembling & Peripheral Installation Time: 1 Hour

Max. Marks: 20

Instructions: Attempt all questions.

Section-A Objective Type Questions (5x1) Marks

1. Which one of the following is a BIOS used for?
   a. Updating system information on network
   b. Loading operating system
   c. It helps in routing
   d. It takes inputs from keywords and other devices

2. Laser Jet Printer speeds are measured in pages per minute (PPM), which one of the following is used to measure dot-matrix printers?
   a. Lines per inch
   b. Lines per sheet
   c. Characters per inch
   d. Characters per second

3. Which one of the following steps is not involved in the boot process?
   a. Load the operating system in to RAM.
   b. The power on self-test.
   c. Activate the basic input/ output system (BIOS).
   d. Load application programs

4. Which one of the following chip acts as a clock to keep the current date and the time?
   a. DVRAM
   b. CMOS
   c. RAM
   d. ROM

5. Which one of the following interface connect with IDE (ATE) or SATA Mother board?
   a. Mother board
   b. RAM
   c. Processor
   d. Hard disk

Section-B Short-Answer Type Questions (3x2) Marks

1. Write two benefits of having a UPS on a system.
2. Give the difference between a brownout and a blackout.
3. Give the differences between a server and a desktop

Section-C Essay Type Questions (3x3) Marks

1. What is the difference between online and offline UPS?
2. Explain how laser printer works.
3. Explain the purpose of BIOS in a system.

Registration No.....

SCHOOL OF IT (Networking)

FIRST IN-SEMESTER EXAMINATION – 2018

SUMMER SEMESTER, B. VOC. PROGRAM

ITN1102 Computer Assembling & Peripheral Installation **Time: 1 Hour**

Max. Marks: 20

Instructions: Attempt all questions.

Section-A Objective Type Questions (5x1) Marks

1. Which of the following BIOS is used for?
   a. Updating system information on network
   b. Loading operating system
   c. It helps in routing
   d. It takes inputs from keywords and other devices

   ANS: b
2. Laser Jet Printer speeds are measured in pages per minute(PPM), what do we use to measure dot-matrix printers?
   a. A. Lines per inch
   b. B. Lines per sheet
   c. C. Characters per inch
   d. D. Characters per second

   ANS: d
3. Which of the following steps is not involved in the boot process?
   a. Load the operating system in to RAM.
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   a. DVRAM
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   ANS: b
5. Which of the following interface connect with IDE (ATE) or SATA Mother board?
   a. Mother board
   b. RAM
   c. Processor
   d. Hard disk

   ANS: d

Section-B Short-Answer Type Questions (3x2) Marks

1. **Write two benefits to have a UPS on a system.**

ANS:

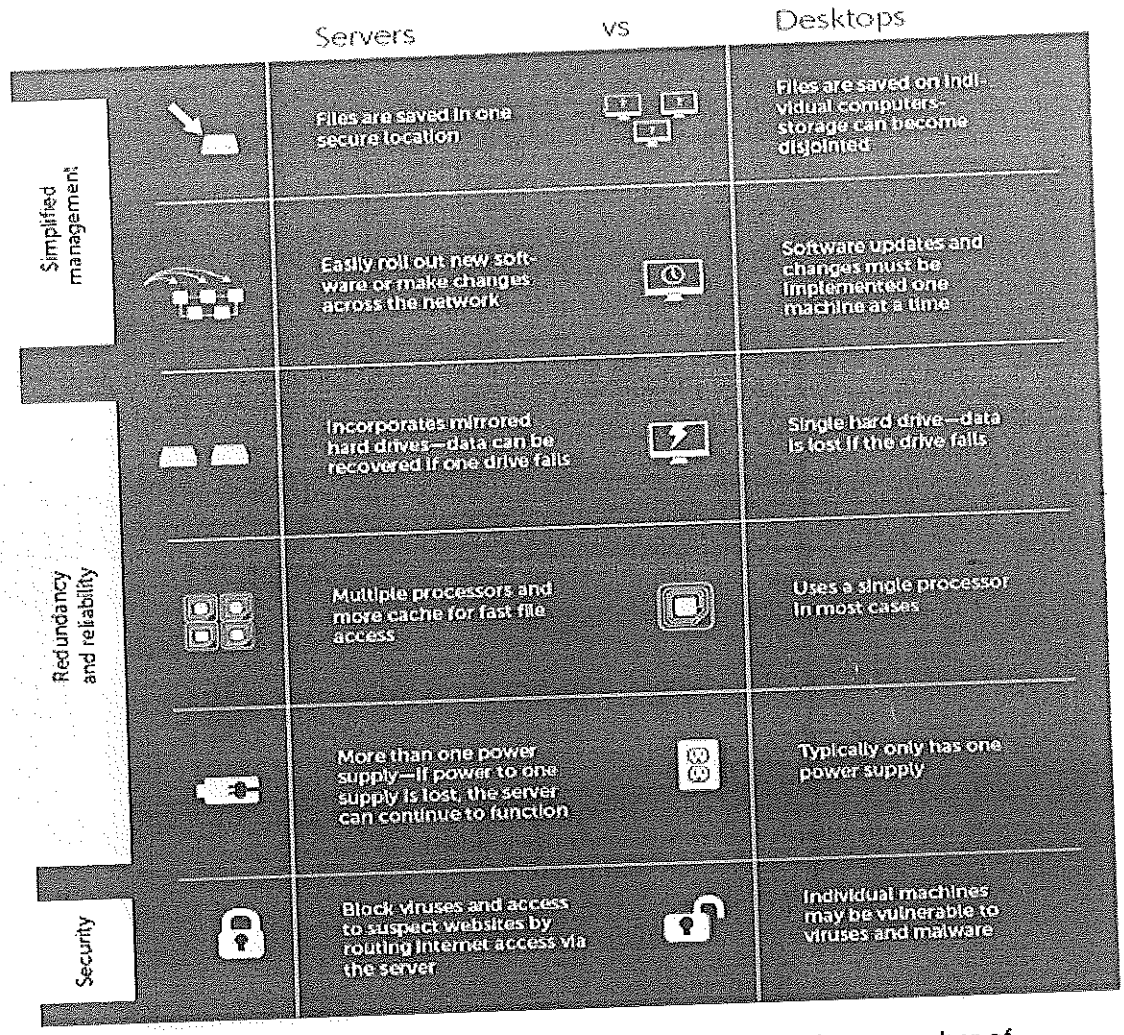
a. Uncertain Data Loss Can Be Prevented: Computer Systems are not featured with battery like laptops.
b. Emergency Power Supply.
c. Protects the Voltage Sensitive Device from Bad Electricity.
d. Provides Surge Protection.
e. Maintains Battery Life.

f. Huge Power Back Up in the Industries.

2. **Describe the difference between a brownout and a blackout.**
ANS: A blackout is the result of a total power outage, and a brownout is a reduction in the output of energy by an electric provider. Brownouts are sometimes intentionally produced in an effort to avoid a blackout while problems with system voltage are corrected.

Brownouts can result in issues with electric devices that require certain voltage levels to function, such as computers. Blackouts indicate major equipment failure or weather issues leading to total loss of power.

3. **Describe the differences between a server and a desktop**
ANS:



Servers are designed to support multiple users and run a large number of different services and applications. Many **small businesses can benefit greatly** from the increased data capacity, information sharing, and security that a server offers.

Section-C Essay Type Questions **(3x3) Marks**

1. **What is the difference between online and offline UPS??**

Ans:

S.no.	Online UPS	Offline UPS
1	Online UPS does not connect mains power to the load at normal operation or outages. The battery bank is always-on, in-line with the load.	The battery bank of the offline UPSs is not in-line with the load at a normal situation. The mains is connected directly to the load.
2	Since the battery is always connected to the load, there is no	There is a millisecond of a delay at the transferring due to power line

	transfer time involved in online UPSs. The transfer switch connects the inverter to the load at normal condition.	detection and switching by the power electronics circuit.
3	The cost of online UPS is higher since the rectifier is designed to handle high power for the simultaneous battering charging and load-supply.	Offline UPSs are comparatively less expensive due to the simpler design
4	Sensitive and highly critical loads such as medical instruments, data centers are powered by online UPSs. Due to isolation from mains to the load, there will not be any distortion at the output.	Offline UPSs do not provide isolation. Hence, there will be a voltage distortions of input reflected at the output at normal operation of offline UPS

2. **Explain how laser printer works?**

ANS: Step-by-step

i. The moment we press print on our computer, tablet or mobile device the information is sent to the printer memory, where the data is stored.

ii. The printer begins to warm up. This is the point where we usually need to wait and it's because the corona wire is heating up and getting ready to pass its positive static charge to the drum.

iii. As the drum (coated metal cylinder) begins to roll, it received a positive charge across it's whole surface. Some printers contain 4 drums, one for each colour – Cyan, Magenta, Yellow & Black.

iv. The laser activates, and beams against a series of mirrors to reflect across the surface of the drum(s) imprinting the shape of our print using an opposite negative electrical charge.

v. The toner cartridge and hopper, sat next to the drum(s) slowly releases positively charged carbon toner particles on to the drum as it turns and the toner is attracted to any areas of negative charge leaving positively charged areas of the drum untouched.

vi. The transfer belt rolls the paper through the printer giving it a positive charge, and as it passes the drum, the negatively charged toner is attracted to the page in the shape of our print.

3. **Explain the purpose of BIOS in a system?**

ANS :

BIOS contains a number of hardware configuration options that can be changed through the setup utility. Saving these changes and restarting the computer applies the changes to the BIOS and alters the way BIOS instructs the hardware to function.

The four main functions of a PC BIOS

- POST - Test the computer hardware and make sure no errors exist before loading the operating system. Additional information on the POST can be found on our POST and Beep Codes page.
- Bootstrap Loader - Locate the operating system. If a capable operating system is located, the BIOS will pass control to it.
- BIOS drivers - Low-level drivers that give the computer basic operational control over your computer's hardware.
- BIOS or CMOS Setup - Configuration program that allows you to configure hardware settings including system settings such as computer passwords, time, and date.

School of IT (Networking)

Semester- 1 2nd In-Sem. Examination

B. Voc. Program Summer Semester (2018-19)

ITN 1104 Basic Computer Networking **Time: 1 Hour**

Instruction: Write neatly and draw diagrams where necessary. **Max. Marks: 20**

Section – A

05 objective type questions, each question carries 01 mark. **05X01 = 05 Marks**

Q1. Which one of the following is the length of IPV4 Address?

A. 8 bit

B. 16 bit

C. 32 bit

D. 64 bit

Q2. Router operates in which one of the following layer of OSI Reference Model?

A. Layer 1 (Physical Layer)

B. Layer 3 (Network Layer)

C. Layer 4 (Transport Layer)

D. Layer 7 (Application Layer)

Q3. Which one of the following provides a connection-oriented reliable service for sending messages?

A. TCP

B. IP

C. UDP

D. All of the above

Q4. The Internet is an example of which one of the following?

A. Cell switched network

B. circuit switched network

C. Packet switched network

D. All of above

Q5. Routing tables of a router keeps track of which one of the following?

A. MAC Address Assignments

B. Port Assignments to network devices

C. Distribute IP address to network devices

D. Routes to use for forwarding data to its destination

Section – B

03 short answer type questions, each question carries 02 marks. **03X02 = 06 Marks**

Q6. What is CSMA/CD and CSMA/CA. Where are they used?

Q7. What are routers? Explain their functioning.

Q8. When you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well? Give reasons for your answer.

Section – C

03 essay-type questions, each question carries 03 marks. **03X03 = 09 Marks**

Q9. Explain various types of networks based on their sizes?

Q10. Distinguish between adaptive and non-adaptive routing algorithms. Name the metrics which can be used to measure the path length.

Q11. Give comparison of virtual-circuit (Connection oriented) and datagram (Connectionless) networks.

Answer Key

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of IT(Networking
Semester- 1, 2nd In-Sem Examination
B. Voc. Program, Summer (2018-19)

Time: 1 Hour
Max. Marks: 20

Course Code: ITN 1104
Course Name: Basic Computer Networking
Instruction: Write neatly and draw diagram where necessary.

Section - A

A1. C
A2. B
A3. A
A4. C
A5. D

Section – B

A6. In CSMA/CD, the protocol allows collisions to happen. If there is a collision, it will be detected, destroyed, and the frame will be resent. CSMA/CA uses a technique that prevents collision. CSMA/CD is used in classical Ethernet and CSMA/CA is used in wireless LAN.

A7. Routers can connect two or more network segments. These are intelligent network devices that store information in its routing table such as paths, hops and bottlenecks. With this info, they are able to determine the best path for data transfer. Routers operate at the OSI Network Layer.

A8. Yes, that's because MAC addresses are hard-wired into the NIC circuitry, not the PC. This also means that a PC can have a different MAC address when the NIC card was replace by another one.

Section – C

A9. Size of the Network is defined as the geographic area and the number of computers covered in it. Based on the size of the network they are classified as below,

Based on the size of the Network they are classified as below,

- Personal Area Network(PAN): It is a smallest and basic network type that is often used at home. It is a connection between the computer and another device such as phone, printer, modem tablets etc.

- Local Area Network (LAN): A network with a minimum of two computers to a maximum of thousands of computers within an office or a building is termed as LAN. Generally, it works for a single site where people can share resources like printers, data storage etc.

- Metropolitan Area Network (MAN): It is larger than LAN and used to connect various LAN's across small regions, a city, campus of colleges or universities etc which in turn forms a bigger network.
- Wide Area Network (WAN): Multiple LAN's and MAN's connected together form a WAN. It covers a wider area like a whole country or world.

A10. Non adaptive Routing: Once a pathway to a destination has been selected the router sends all packets for that destination along that one route. The routing decisions are not based on the condition or topology of the networks.

Adaptive Routing: Router may select a new route for each packet (even packets belonging to the same transmission) The routing decisions are based on the condition or topology of the networks. Path length can be measured using various metrics.

- Geographic Distance
- Mean delay
- Bandwidth
- Average traffic
- Communication cost
- Measured delay

A11.Comparison between Datagram and Virtual-Circuit networks is given below.

Issue	Datagram network	Virtual-circuit network
Circuit setup	Not needed	Required
Addressing	Each packet contains the full source and destination address	Each packet contains a short VC number
State information	Routers do not hold state information about connections	Each VC requires router table space per connection
Routing	Each packet is routed independently	Route chosen when VC is set up; all packets follow it
Effect of router failures	None, except for packets lost during the crash	All VCs that passed through the failed router are terminated
Quality of service	Difficult	Easy if enough resources can be allocated in advance for each VC
Congestion control	Difficult	Easy if enough resources can be allocated in advance for each VC

Registration No: .....

SCHOOL OF IT (Networking)

SECOND IN-SEMESTER EXAMINATION – 2018

FIRST SEMESTER, B. VOC. PROGRAM

ITN1105 Basics of Operating System **Time: 1 Hour**

Max. Marks: 20

Instructions: **Attempt all questions.**

Section-A Objective Type Questions **(5x1) Marks**

1. Which one of the following is correct?
   i. Threads are also known as Lightweight processes
   ii. Threads are also known as heavy processes.
   iii. Both the above statements are correct.
   iv. None of the above is correct.

2. Which one of the following increases multiprocessing?
   i. Increasing number of threads.
   ii. Decreasing the number of threads.
   iii. Threads have no effect on multiprocessing.
   iv. Using single CPU.

3. Which one of the following occurs after a process issues an I/O request?
   i. The process placed in I/O queue.
   ii. The process is placed in interrupt queue.
   iii. The process is placed in Ready queue.
   iv. The process is preempted.

4. Which one of the following is also known as CPU scheduler?
   i. Long Term Schedular is also known as CPU Scheduler.
   ii. Short Term Schedular is also known as CPU Scheduler.
   iii. Mid Term Schedular is also known as CPU Scheduler.
   iv. None of the above.

5. Which one of the following is the correct definition of Critical Section?
   i. A Critical Section is a code segment that accesses shared variables and has to be executed as an atomic action.
   ii. A Critical Section is a code segment that can be preempted.
   iii. A Critical Section is a code segment that can not access shared variables.
   iv. A Critical Section is a code segment which is not important for the process.

Section-B Short-Answer Type Questions **(3x2) Marks**

1. What are scheduling queues?
2. What is process synchronisation?
3. What is a Deadlock?

Section-C Essay Type Questions **(3x3) Marks**

1. What are Threads? Explain single threaded and multi-threaded processes.
2. What is Process Scheduling? Explain non-preemptive and preemptive scheduling.
3. What is virtual memory? Discuss the benefits of virtual memory.

Registration No: .....

SCHOOL OF IT (Networking)

SECOND IN-SEMESTER EXAMINATION – 2018

FIRST SEMESTER,B. VOC. PROGRAM

ITN1105 Basics of Operating System **Time: 1 Hour**

Max. Marks: 20

Instructions: **Attempt all questions.**

Section-A Objective Type Questions **(5x1) Marks**

1. Which one of the following is correct?
   i. Threads are also known as Lightweight processes
   ii. Threads are also known as heavy processes.
   iii. Both the above statements are correct.
   iv. None of the above is correct.

Ans: (i)

2. Which one of the following increases multiprocessing?
   i. Increasing number of threads.
   ii. Decreasing the number of threads.
   iii. Threads have no effect on multiprocessing.
   iv. Using single CPU.

Ans: (i)

3. Which one of the following occurs after a process issues an I/O request?
   i. The process placed in I/O queue.
   ii. The process is placed in interrupt queue.
   iii. The process is placed in Ready queue.
   iv. The process is preempted.

Ans: (i)

4. Which one of the following is also known as CPU scheduler?
   i. Long Term Schedular is also known as CPU Scheduler.
   ii. Short Term Schedular is also known as CPU Scheduler.
   iii. Mid Term Schedular is also known as CPU Scheduler.
   iv. None of the above.

Ans:(ii)

5. Which one of the following is the correct definition of Critical Section?
   i. A Critical Section is a code segment that accesses shared variables and has to be executed as an atomic action.
   ii. A Critical Section is a code segment that can be preempted.
   iii. A Critical Section is a code segment that can not access shared variables.
   iv. A Critical Section is a code segment which is not important for the process.

Ans: (i)

Section-B Short-Answer Type Questions **(3x2) Marks**

1. What are scheduling queues?

   Following Scheduling Queues are used by Operating System:

   All processes when enters into the system are stored in the **job queue**.
   Processes in the Ready state are placed in the **ready queue**.
   Processes waiting for a device to become available are placed in **device queues**. There are unique device queues for each I/O device available.

2. What is process synchronisation?

Process Synchronization means sharing system resources by processes in a such a way that, concurrent access to shared data is handled thereby minimizing the chance of inconsistent data. Maintaining data consistency demands mechanisms to ensure synchronized execution of cooperating processes.

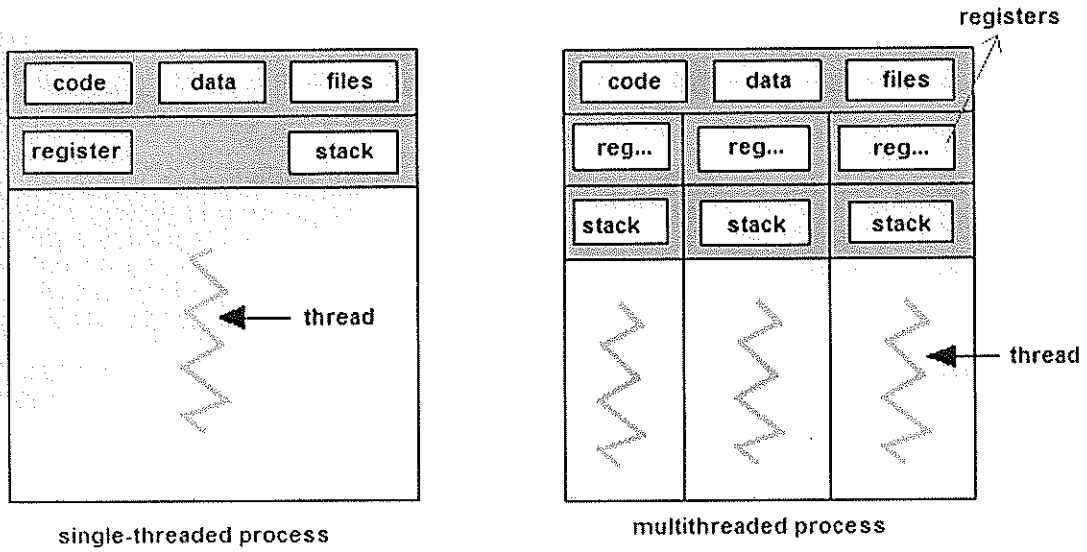
3. What is a Deadlock?

Deadlocks are a set of blocked processes each holding a resource and waiting to acquire a resource held by another process.

Section-C Essay Type Questions (3x3) Marks

1. What are Threads? Explain single threaded and multi-threaded processes.
Thread is an execution unit which consists of its own program counter, a stack, and a set of registers. Threads are also known as Lightweight processes. Threads are popular way to improve application through parallelism. The CPU switches rapidly back and forth among the threads giving illusion that the threads are running in parallel.

As each thread has its own independent resource for process execution, multiple processes can be executed parallely by increasing number of threads.



single-threaded process multithreaded process

2. What is Process Scheduling? Explain non-preemptive and preemptive scheduling.

The act of determining which process in the ready state should be moved to the running state is known as Process Scheduling. The prime aim of the process scheduling system is to keep the CPU busy all the time and to deliver minimum response time for all programs. For achieving this, the scheduler must apply appropriate rules for swapping processes IN and OUT of CPU.

Schedulers fell into one of the two general categories:

Non pre-emptive scheduling. When the currently executing process gives up the CPU voluntarily.
Pre-emptive scheduling. When the operating system decides to favour another process, pre-empting the currently executing process.

3. What is virtual memory? Discuss the benefits of virtual memory.

Virtual Memory is a space where large programs can store themselves in form of pages while their execution and only the required pages or portions of processes are loaded into the main memory. This technique is useful as large virtual memory is provided for user programs when a very small physical memory is there.

Benefits of having Virtual Memory:

- Large programs can be written, as virtual space available is huge compared to physical memory.
- Less I/O required, leads to faster and easy swapping of processes.
- More physical memory available, as programs are stored on virtual memory, so they occupy very less space on actual physical memory.

Registration No.....

Bhartiya Skill Development University
School of IT & Networking
1st Semester / 2nd In-Sem. Examinations
B. Voc. Program, Winter Semester (2018-19)

ITN1106 Network Server Management

Time: 1 Hour

Max. Marks: 20

Instructions: Attempt all questions.

Section-A

(5x1) =05 Marks

1. Which one of the following ports is associated with Telnet Service?

   a) 20 b) 21 c) 22 d) 23

2. Which one of the following commands is used to upload a file with FTP Server?

   a) get b) pwd c) put d) wget

3. Which one of the following command tools is used to test DNS services?

   a) ipconfig b) ping c) nslookup d) dsquery

4. Which one of the following features is provided by DHCP Server on lease duration?

   a) IP Address b) Gateway c) DNS d) All of them

5. Which one of the following is the default path for Web Site hosting?

   a) c:\web\root b) c:\inet\ftp c) c:\inetpub\wwwroot d) c:\web\wwwroot

Section-B

(3x2) = 06 Marks

1. Define Telnet. Why is it not preferred in a network?
2. What are the different group policies associated with a Server? How are they implemented at a client machine instantly?
3. Differentiate between Active & Passive FTP Servers.

Section-C

(3x3) = 09 Marks

1. What are FTP Services used for? Name the ports associated with it & its default directory while configuration.
2. Define DHCP and its principle with working.
3. Define DNS and its working.

Registration No.....

Bhartiya Skill Development University
School of IT & Networking
1st Semester / 2nd In-Sem. Examinations
B. Voc. Program, Winter Semester (2018-19)

ITN1106 Network Server Management **Time: 1 Hour**

Max. Marks: 20

Instructions: Attempt all questions.

Section-A **(5x1) =05 Marks**

1. Which one of the following port is associated with Telnet Service?

a) 20 b) 21 c) 22 d) 23 **ANSWER D**

2.Which one of the following command used to upload a file with FTP Server?

a) get b) pwd c) put d) wget **ANSWER C**

3.Which one of the following command tool used to test DNS services?

a) ipconfig b) ping c) nslookup d) dsquery **ANSWER C**

4.Which one of the following features provided by DHCP Server on lease duration?

a) IP Address b) Gateway c) DNS d) All of them **ANSWER D**

5.Which one of the following is the default path for Web Site hosting ?

a) c:\web\root b) c:\inet\ftp c) c:\inetpub\wwwroot d) c:\web\wwwroot **ANSWER C**

Section-B **(3x2) = 06 Marks**

1.Define Telnet. Why it's not preferred in network?

Telnet is used for remote administration of Network device /Server.It is CLI based & port 23 is associated with it. It's not preferred in network as password travels in clear Text form. So hackers can easy trace it so security holes.

2.What are the different group policies associated with Server? How to implement at client machine instantly.

Group policies associated are Computer & User. Computer policies specified to specify to computers while user policies are associated with each user. Whenever user login to any computer its applied instantly.

In order to implement on client machine instantly, we can use **gpupdate /force**.

3.Differentiate between Active & Passive FTP Servers.

In an Active FTP connection, the client opens a port and listens and the server actively connects to it. In a Passive FTP connection, the server opens a port and listens (passively) and the client connects to it.

Section-C **(3x3) = 09 Marks**

1.What for FTP Services used? Name the ports associated with it & its default directory while configuration.

FTP services are used for upload & download a files from server. FTP uses one connection for commands and the other for sending and receiving data. FTP has a standard port number on which the FTP server "listens" for connections. A port is a "logical connection point" for communicating using the Internet Protocol (IP). The standard port number used by FTP servers is 21 and is used only for sending commands. Since port 21 is used exclusively for sending commands, this port is referred to as a **command port.** For example, to get a list of folders and files present on the FTP server, the FTP Client issues a "LIST" command. The FTP server then sends a list of all folders and files back to the FTP Client. So what about the internet connection used to send and receive data? The port that is used for transferring data is referred to as a **data port.** The number of the data port will vary depending on the "mode" of the connection. (See below for Active and Passive modes.)

Default directory is c:/inetpub/ftproot

2.Define DHCP & its principle with working.

Dynamic Host Configuration Protocol (DHCP) is used to provide the following:

IP address,Subnet mask,Gateway,DNS

On lease as per configuration at the Server .

=>Work on the principle of

Discover ,Offer ,Request ,Acknowledge

or

Request ,Offer,Select,Acknowledge

DHCP uses Port 67/68 (total ports for services 1 to 65535)

The Dynamic Host Configuration Protocol (DHCP) client TCP/IP software is not configured with a static IP address and it is configured to obtain an IP address dynamically from a Dynamic Host Configuration Protocol (DHCP) Server. When a DHCP client device boots up, it not capable send and receive network traffic, because TCP/IP is not configured. But it can participate in broadcast traffic. DHCP Clients and DHCP Servers uses broadcast messages to communicate with each other. The scope of a broadcast message is only within the local broadcast domain. Broadcast messages will never cross the router to reach another network, because Routers drop Limited Broadcast IP Address.

3.Define DNS & it's working.

The **Domain Name System (DNS)** is used to resolve human-readable hostnames like www.Dyn.com into machine-readable IP addresses like *204.13.248.115*. DNS also provides other information about domain names, such as mail services.But why is DNS important? How does it work? What else should you know?

Why is DNS important?

DNS is like a phone book for the Internet. If you know a person's name but don't know their telephone number, you can simply look it up in a phone book. DNS provides this same service to the Internet.

When you visit *http://dyn.com* in a browser, your computer uses DNS to retrieve the website's IP address of *204.13.248.115*. Without DNS, you would only be able to visit our website (or any website) by visiting its IP address directly, such as *http://204.13.248.115*.

How does DNS work?

When you visit a domain such as *dyn.com,* your computer follows a series of steps to turn the human-readable web address into a machine-readable IP address. This happens every time you use a domain name, whether you are viewing websites, sending email or listening to Internet radio stations like Pandora.

Step 1: Request information

The process begins when you ask your computer to resolve a hostname, such as visiting *http://dyn.com*. The first place your computer looks is its local DNS cache, which stores information that your computer has recently retrieved.

If your computer doesn't already know the answer, it needs to perform a **DNS query** to find out.

Step 2: Ask the recursive DNS servers

If the information is not stored locally, your computer queries (contacts) your ISP's **recursive DNS servers**. These specialized computers perform the legwork of a DNS query on your behalf. Recursive servers have their own caches, so the process usually ends here and the information is returned to the user.

Step 3: Ask the root nameservers

If the recursive servers don't have the answer, they query the **root nameservers**. A **nameserver**is a computer that answers questions about domain names, such as IP addresses. The thirteen root nameservers act as a kind of telephone switchboard for DNS. They don't know the answer, but they can direct our query to someone that knows where to find it.

Step 4: Ask the TLD nameservers

The root nameservers will look at the first part of our request, reading from right to left — *www.dyn.**com*** — and direct our query to the **Top-Level Domain (TLD) nameservers** for *.com*. Each TLD, such as *.com*, *.org*, and *.us*, have their own set of nameservers, which act like a receptionist for each TLD. These servers don't have the information we need, but they can refer us directly to the servers that *do* have the information.

Step 5: Ask the authoritative DNS servers

The TLD nameservers review the next part of our request — *www.**dyn.com*** — and direct our query to the nameservers responsible for this *specific* domain. These **authoritative nameservers** are responsible for knowing all the information about a specific domain, which are stored in **DNS records**. There are many types of records, which each contain a different kind of information. In this example, we want to know the IP address for *www.dyndns.com*, so we ask the authoritative nameserver for the **Address Record (A)**.

Step 6: Retrieve the record

The recursive server retrieves the A record for *dyn.com* from the authoritative nameservers and stores the record in its local cache. If anyone else requests the host record for *dyn.com*, the recursive servers will already have the answer and will not need to go through the lookup process again. All records have a **time-to-live** value, which is like an expiration date. After a while, the recursive server will need to ask for a new copy of the record to make sure the information doesn't become out-of-date.

Step 7: Receive the answer

Armed with the answer, recursive server returns the A record back to your computer. Your computer stores the record in its cache, reads the IP address from the record, then passes this information to your browser. The browser then opens a connection to the webserver and receives the website.

This entire process, from start to finish, takes only milliseconds to complete.

Registration No.....

Bhartiya Skill Development University
School of IT & Networking
1st Semester / 2nd In-Sem. Examinations
B. Voc. Program, Summer/Winter Semester (2018-19)

ITN1301 Network Devices Management **Time: 1 Hour**

Max. Marks: 20

Instructions: Attempt all questions.

Section-A **(5x1) =05 Marks**

1. Which one of the following protocol provides information of neighbour devices in a network?

a) RIP b) TCP c) CDP d) IGRP

2.Which one of the following is the command to show the route in router?

a) route b) ip route c) show ip route d) All of These

3.Which one of the following is true regarding storage of IOS in routers?

a) Flash b) NVRAM c) None of These d) All of These

4.Which one of the following is an exterior routing protocol?

a) RIP b) BGP c) IGMP d) OSPF

5.Which one of the following is the number for Standard Access List?

a) 1 b) 101 c) 201 d) 301

Section-B **(3x2) = 06 Marks**

1.Differentiate between routed and routing protocol.

2.Define Administrative Distance. Write the AD of different protocols.

3.Where is access policy needed to be placed in Standard & Extended ACL? Specify range for both of them.

Section-C **(3x3) = 09 Marks**

1. Write any six basic commands of routers with functions.
2. How do you configure a Router with Console cable? Draw a neat layout with Symbols.
3. What are the configuration files associated with a Router? Where are they stored? What are their roles?

Registration No.....

Bhartiya Skill Development University
School of IT & Networking
3rd Semester / 2nd In-Sem. Examinations
B. Voc. Program, Summer/Winter Semester (2018-19)

ITN1301 Network Devices Management

Time: 1 Hour

Max. Marks: 20

Instructions: Attempt all questions.

Section-A **(5x1) =05 Marks**

1. Which one of the following protocol provides information of neighbour devices in a network?

a) RIP b) TCP c) CDP d) IGRP **Answer C**

2.Which one of the following is the command to show the route in router?

a) route b) ip route c) show ip route d) All of These **Answer C**

3.Which one of the following is true regarding storage of IOS in router?

a) Flash b) NVRAM c) None of These d) All of These **Answer D**

4.Which one of the following is exterior routing protocol?

a) RIP b) BGP c) IGMP d) OSPF **Answer B**

5.Which one of the following is number for Standard Access List?

a) 1 b) 101 c) 201 d) 301 **Answer A**

Section-B **(3x2) = 06 Marks**

1.Differentiate between routed & routing protocol.

A routed protocol is a protocol by which data can be routed. Routed protocol are IP, AppleTalk, and IPX. In this kind of protocols we require an addressing scheme and subnetting. Addressing scheme will be used to determine the network to which a host belongs and to identifying that host on that particular network. All hosts on an internetwork are using the services of a routed protocol. That means routers, servers, and workstations to. The only two routed protocols that are in use today are IP and IPX but IPX is dropped from Cisco in exams and is not in use much these days. If you are studying routed protocols the best advice is to focus on IP routed protocol.

A routing protocol is different and is only used between routers. It makes possible for routers to build and maintain routing tables. There are three classes of routing protocols- 1)distance vector, 2)link state,3)hybrid OSPF is one of two link state protocols, the other one is IS-IS. EIGRP is the only hybrid protocol but in normal literature you will see that EIGRP is distance vector routing protocol.

2.Define Administrative Distance. Write the AD of different protocols.

Administrative distance is the feature that routers use in order to select the best path when there are two or more different routes to the same destination from two different routing protocols. **Administrative distance** defines the reliability of a routing protocol.

RIP 120 ,IGRP=100,OSPF=110

3.Where access policy need to place in Standard & Extended ACL? Also specify range for both of them.

Standard ACL - Needs to be placed close to the destination device that you want to prevent the source from reaching. Range from 1 to 99
Extended ACL - Needs to be placed close to the source device. The extended ACL can filter on both the source as well as destination address Range from 100-199

Section-C **(3x3) = 09 Marks**

1. Write any six basic commands of router with functions?

Common basic commands are as follows: -

Show history = Default 10 commands in history

Show Clock = Show device date & time

Show ip route = It will show the default route

Enable= It is used to move from user mode to privilege mode

Disable= It is used to move from privilege mode to user mode

2. How to configure a Router with Console cable. Draw a neat layout with Symbol.

Connect the serial port (9 pin connector) of the PC with the Network Device Console port. If serial port port not available, then we can use USB port with USB TO SERIAL Convertor.

3. What are the configuration files associated with Router? Where configuration files are stored. What are the role of them?

Configuration files associated with Router are running –config & startup-config.

Running –config are stored in RAM while Startup-config stored in flash .

Role of Running-config is to store data in RAM .Startup–config used to save the configuration permanently.

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of IT/Networking Skill

1st Semester, 2nd-Insem. Examination

B. Voc. Program, Summer (2018-19)

ITN1302 Wireless Networks **Answer all the questions** **Time: 1 Hour**
Max. Marks: 20

Section – A

05 objective type questions, each question carries 01 mark. **05X01 = 05 Marks**

1. Which one of the following is correct for modulation process?
   i) Carrier characteristics varies with message signal
   ii) message signal characteristics varies with carrier signal
   iii) both carrier and message signal are varied
   iv) No characteristics of message and carrier signal varies
2. Which one of the following happens for Amplitude modulation (AM)?
   i) Frequency of the carrier is varied with message
   ii) Amplitude of the carrier is varied with message
   iii) Both amplitude and frequency of carrier is varied simultaneously
   iv) No variation occurs
3. Which one of the following is true for Frequency Modulation (FM)?
   i) Less resistant to noise ii) more resistant to noise iii) None of these iv) all the above
4. Which one of the following parameters is kept constant in Phase modulation (PM)?
   i) Frequency ii) Amplitude iii) Phase iv) Both Frequency and Amplitude
5. Which one of the following values of the modulation index(m) is true for over modulation?
   i) m< 1 ii) m>1 iii) m=1 iv) none of the above

Section – B

03 short answer type questions, each question carries 02 marks. **06 Marks**

1. What is an AM wave? What are its advantages?
2. Why is FM wave more resistant to noise? Discuss.
3. Give the differences between PM and FM

Section – C

03 essay type questions, each question carries 03 marks. **03X03 = 09 Marks**

1. How can amplitude modulation be generated? Explain with a proper diagram.
2. How can you configure a Wi-Fi network? What are the Wi-Fi protocols?
3. What do you mean by frequency modulation? Draw and explain FM with necessary diagrams.

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BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of IT/Networking Skill

3rd/4th Semester, 2nd-Insem. Examination

B. Voc. Program, Summer (2018-19)

ITN1302 **Time: 1 Hour**

Wireless Networks **Max. Marks: 20**

Answer sheet

Section – A

Select the correct answer of the following question 05X01 = 05 Marks

1. i)
2. ii)
3. ii)
4. iv)
5. ii)

Section – B

03X02 = 06 Marks

1. Amplitude modulation (AM) is a technique where the amplitude (signal strength) of the carrier wave is varied in proportion to that of the message signal.
   Advantages of AM
   a. Simple to implement.
   b. AM Transmitters are less complex.
   c. AM Receivers are very cheap and no specialized components are needed
   d. AM wave can travel longer distance
   e. AM waves have low bandwidth
2. In AM wave, different amplitudes at different points. When noise is added, it directly affects this amplitude and hence the information contained in it. In Frequency modulation, the frequency is varied. When noise is added to this wave, it affects the amplitude again. But since information is stored in the frequency, the information is not affected by this noise.
3. Difference between PM and FM:

PM	FM
Phase of carrier signal changes with respect to message signal	FM frequency of carrier signal changes in accordance with the instantaneous value of modulating signal.
PM is used in data communication system	FM is used in radio broadcasting, direct satellite broadcasting.

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Section – C

03X03 = 09 Marks

1. Amplitude modulation (AM) is defined as a process in which the amplitude of the carrier wave c(t) is varied about a mean value, linearly with the baseband signal m(t).

$$c(t) = A_c \cos(2\pi f_c t)$$

$$s(t) = A_c[1 + k_a m(t)] \cos(2\pi f_c t)$$

where ka is a constant called the amplitude sensitivity of the modulator responsible for the generation of the modulated signal s(t).

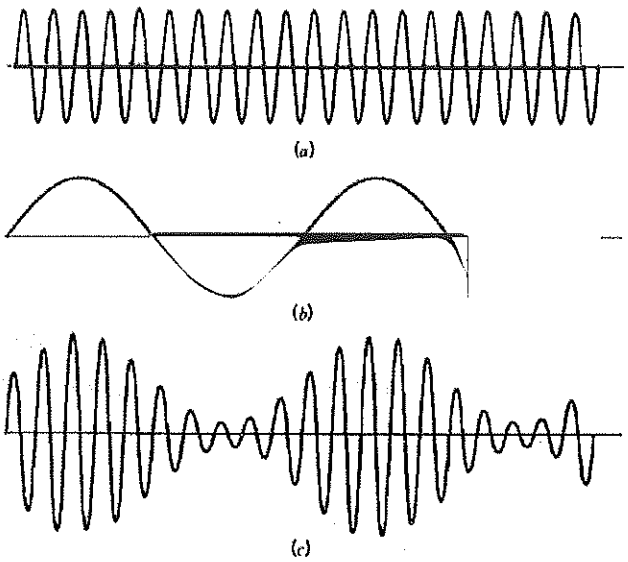

Fig: AM wave

2.

A. Configuration of wireless network
   - Connection of a laptop or PC to the wireless access point's console port via a serial cable.
   - Use of terminal software, to view access point configuration screens
   - Change specific settings, such as radio channel and transmit power.
   - Accessing the configuration screens which is often character-based and not user-friendly.
   - A serial cable limits how far it can moved from the wireless access point when performing the configuration

B. Wi-Fi protocol is a digital communications protocol, through which gadgets can communicate with each other in a unicast or a broadcasting manner without using any wires.

3. Frequency modulation is a process in which the frequency of the carrier is controlled by the modulating signal.

Frequency modulation (FM) is that form of angle modulation in which the instantaneous frequency *f(t)* is varied linearly with the message signal m(t), as shown by

$$f_i(t) = f_c + k_f m(t) \quad \text{.....(1)}$$

The term fc represents the frequency of the unmodulated carrier, and the constant k represents the frequency sensitivity of the modulator, expressed in Hertz per volt.

The frequency-modulated signal is therefore described in the time domain by

$$s(t) = A_c \cos\left[2\pi f_c t + 2\pi k_f \int_0^t m(\tau)\, d\tau\right] \quad \text{..... (2)}$$

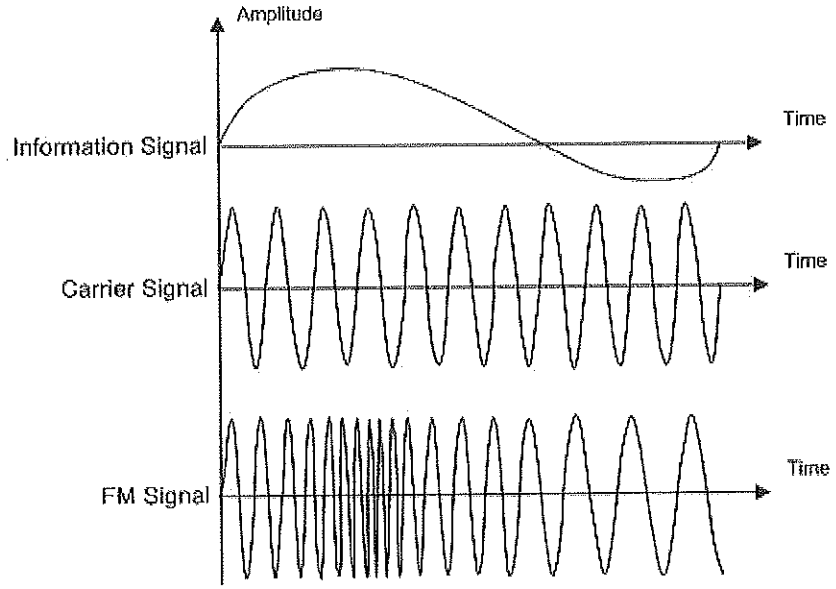

Fig 2: Frequency modulated wave

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BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of IT & NETWORKING

3rd Semester 2nd In-Sem. Examination

B. Voc. Program, Winter Semester (2018-19)

ITN1303 Basics of Network Security **Time: 1 Hour**

Max. Marks: 20

Instruction: Answer All Questions

Section – A

05X01 = 05 Marks

Q1. On which one of the following ports, http service runs by default?

a. Port 80
c. Port 8080
b. Port 88
d. Port 8888

Q2. Which one of the following service run on the port number 443 by default?

a. DNS
c. SNMP
b. SMTP
d. HTTPS

Q3. Which one of the following is the total number of TCP/UDP ports available to us?

a. 65535
c. 65536
b. 131070
d. 0

Q4. Which one of the following is an encryption technique?

a. AES
c. DES
b. RSA
d. All of the above

Q5. Which one of the following is a configuration setting type of Windows firewall?

a. Inbound
c. Outbound
b. Restore Default
d. All of the above

Section – B

03X02 = 06 Marks

Q1 What are the TCP/UDP Ports? Describe any one with the help of an example.

Q2 What are the various TCP/UDP services? Describe any one with the help of an example.

Q3 What do you mean by physical security? Explain briefly.

Section – C

03X03 = 09 Marks

Q1 What are encryption and decryption? Explain with the help of an example.

Q2 What do you understand by group policy for user access? Discuss.

Q3 What is a Firewall? Briefly explain.

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of IT & NETWORKING

3rd Semester 2nd In-Sem. Examination

B. Voc. Program, Winter Semester (2018-19)

Course Code: ITN1303 | **Time: 1 Hour**

Course Name: Basics of Network Security | **Max. Marks: 20**

Instruction: Answer All Questions

Section – A

05X01 = 05 Marks

Q1. On which one of the following port, http service run by default?

a. Port 80
c. Port 8080
b. Port 88
d. Port 8888

Q2. Which one of the following service by default run on the port number 443?

a. DNS
c. SNMP
b. SMTP
d. HTTPS

Q3. Which one of the following is a total number of TCP/UDP ports available to us?

a. 65535
c. 65536
b. 131070
d. 0

Q4. Which one of the following is a encryption technique?

a. AES
c. DES
b. RSA
d. All of the above

Q5. Which one of the following is a configuration setting types of firewall?

a. Inbound
c. Outbound
b. Restore Default
d. All of the above

Section – B

03X02 = 06 Marks

Q1 What are the TCP/UDP Ports? Describe any one with the help of an example.

A1. In TCP/IP and UDP networks, a port is an endpoint to a logical connection and the way a client program specifies a specific server program on a computer in a network. The port number identifies what type of port it is. For example, port 80 is used for HTTP traffic.

Q2 What are the various TCP/UDP services? Describe any one with the help of an example.

A2. *The services offered by TCP/UDP to the processes at the application layer are as follows: SMTP, FTP,DNS etc.*

Q3 What do you mean by physical security? Explain briefly.

A3. Physical lock, Restricted Access, Fire Security, Water Security, Natural Causes, Disasters, Back-ups

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Section – C

03X03 = 09 Marks

Q1 What is encryption and decryption? Explain with the help of an example?

A1. Encryption is the process of translating plain text data (*plaintext*) into something that appears to be random and meaningless (*ciphertext*). Decryption is the process of converting ciphertext back to plaintext.

Q2 What do you mean by group policy?

A2. *Group Policy is a feature of the Microsoft Windows NT family of operating systems that controls the working environment of user accounts and computer accounts. Group Policy provides centralized management and configuration of operating systems, applications, and users' settings in an Active Directory environment. Group Policy allows administrators to define options for what users can do on a network – including what files, folders and applications they can access.*

Q3 What is firewall? briefly explain.

A3. *A **firewall** is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules.[1] a firewall typically establishes a barrier between a trusted internal network and untrusted external network, such as the internet.*

Registration No: .....

SCHOOL OF IT (Networking)

FIRST IN-SEMESTER EXAMINATION – 2018

THIRD SEMESTER, B. VOC. PROGRAM

ITN1304 Linux/Red Hat Administration **Time: 1 Hour**

Instructions: Attempt all questions **Max. Marks: 20**

Section-A Objective Type Questions **(5x1) Marks**

1. Which one of the following is correct?
   i. Swap partitions are used to support virtual memory.
   ii. Swap partitions are not desirable.
   iii. Swap partitions are user accessible.
   iv. Operating system cannot boot without swap partitions.

2. which one of the following is the number of default Virtual Text Mode Consoles available in Linux Box?
   i. 4
   ii. 8
   iii. 6
   iv. 9

3. Which one of the following is correct?
   i. Journaling file system reduces time spent on recovering a file system after a crash.
   ii. Journaling file system increases time spent on recovering a file system after a crash.
   iii. Journaling file system has no effect on time spent on recovering a file system after a crash.
   iv. None of the above.

4. Which one of the following is true?
   i. #! indicates to the kernel that the script is directly executable.
   ii. #! indicates to the kernel that the script is not executable.
   iii. #! indicates to the kernel that the script is readable.
   iv. #! has no meaning to the kernel.

5. Which one of the following is true for Linux commands
   i. Multiple commands cannot be separated by a;
   ii. Multiple commands can be separated by a;
   iii. Multiple commands cannot be issued in a single line.
   iv. Multiple commands can be separated by a; but will result in error

Section-B Short-Answer Type Questions **(3x2) Marks**

1. Give the different 'run levels' defined in Linux?
2. What information is contained in /etc/passwd file?
3. What is the function of "chgrp" command? Explain with examples.

Section-C Essay Type Questions **(3x3) Marks**

1. What is the function of /etc/shadow file? How can it be used to suspend a user account? Describe all the fields contained in it.
2. What are cron scripts? Write a cron script to schedule backup of /home directory at 23:00:00 hours daily to /home/backup directory.
3. How many types of print queues can be configured in Linux? Discuss each briefly.

Registration No: .....

SCHOOL OF IT (Networking)

FIRST IN-SEMESTER EXAMINATION – 2018

THIRD SEMESTER, B. VOC. PROGRAM

ITN1304 Linux/Red Hat Administration **Time: 1 Hour**

Max. Marks: 20

Instructions: Attempt all questions.

Section-A Objective Type Questions **(5x1) Marks**

1. Which one of the following is correct?
   i. Swap partitions are used to support virtual memory.
   ii. Swap partitions are not desirable.
   iii. Swap partitions are user accessible.
   iv. Operating system can not boot without swap partitions.
   Ans: (I)

2. How many default Virtual Text Mode Consoles are available in Linux Box?
   i. 4
   ii. 8
   iii. 6
   iv. 9
   Ans: (III)

3. Which one of the following is correct?
   i. Journaling file system reduces time spent on recovering a file system after a crash.
   ii. Journaling file system increases time spent on recovering a file system after a crash.
   iii. Journaling file system has no effect on time spent on recovering a file system after a crash.
   iv. None of the above.
   Ans: (I)

4. Which one of the following is true?
   i. #! indicates to the kernel that the script is directly executable.
   ii. #! indicates to the kernel that the script is not executable.
   iii. #! indicates to the kernel that the script is readable.
   iv. #! has no meaning to the kernel.
   Ans: (I)

5. Which one of the following is true for Linux commands
   i. Multiple commands can not be separated by a;
   ii. Multiple commands can be separated by a;
   iii. Multiple commands can not be issued in a single line.
   iv. Multiple commands can be separated by a; but will result in error
   Ans: (II)

Section-B Short-Answer Type Questions **(3x2) Marks**

1. What are different 'run levels' defined in Linux?
   The following runlevels are defined in Linux:

   0 - halt (Do NOT set init default to this)
   1 - Single user mode
   2 - Multiuser, without Network (The same as 3, if you do not have networking)
   3 – Text Mode, with networking.
   4 - unused
   5 – Graphical Mode with networking.

6 - reboot (Do NOT set init default to this)

2. What information is contained in /etc/passwd file?
   The /etc/passwd file holds user account information. It includes following fields:
   Login name
   User Id (uid)
   Group Id (gid)
   General Comment about the user
   Home Directory
   Shell
3. What is the function of "chgrp" command? Explain with examples.
   chgrp is used to Change group of a file or directory. -R option changes the group of files recursively.
   Ex: chgrp <group1> <filename> : Change group of a file to group1.

Section-C Essay Type Questions **(3x3) Marks**

1. What is the function of /etc/shadow file? How it can be used to suspend a user account? Describe all the fields contained in it.
   /etc/shadow Contains the encrypted password information for users' accounts and optionally the password ageing information. Included fields are:
   - Login name
   - Encrypted password
   - Days since Jan 1, 1970 that password was last changed
   - Days before password may not be changed
   - Days after which password must be changed
   - Days before password is to expire that user is warned
   - Days after password expires that account is disabled
   - Days since Jan 1, 1970 that account is disabled

   To suspend a user account put a * as start of Password field in /etc/shadow and Change login shell to /sbin/nologin, alternatively use GUI to suspend the user

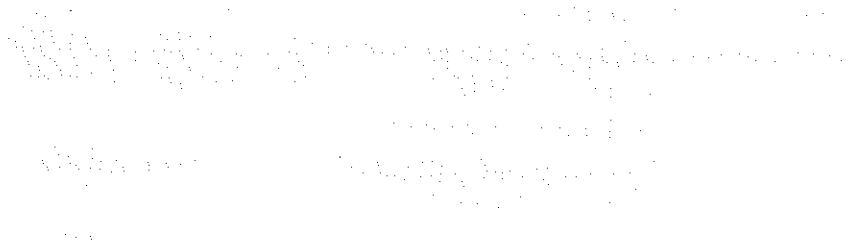
2. What are cron scripts? Write a cron script to schedule backup of /home directory at 23:00:00 hours daily to /home/backup directory.
   Cron is a program that enables execution of a command, or a script with a sequence of commands, at a specified date, time or at set intervals.
   Add the job script in /etc/cron.hourly or /etc/cron.daily or /etc/cron.weekly or /etc/cron.monthly to schedule a job
   Make an entry in /etc/crontab file to schedule a job (crontab -e) the format is
   * * * * * command_to_execute
   each star denotes Minute Hour Day_of_Month Month Day_of_Week
   Minute = Minute of the hour, 00 to 59. * Will indicate every minute
   Hour = Hour of the day in 24-hour format, 00 to 23. * Will indicate

every hour
Day = Day of the month, 1 to 31. * Will indicate every day
Month = Month of the year, 1 to 12. * Will indicate every month
Day = Day of the week, 3 chars - sun, mon, tue, or numeric (0=sun, 1=mon etc).... * Will indicate every day
Task = The command you want to execute
Script to schedule backup at 23:00:00hours daily is given below:
crontab -e #starts the editor
0 23 * * * tar -cvf /home/backup.tar /home/
save the file by pressing Esc : and wq

3. How many types of print queues can be configured in Linux? Briefly discuss each one of them.

The following types of print queues can be configured:

- Locally-connected — a printer attached directly to the computer through a parallel or USB port.
- Networked CUPS (IPP) — a printer that can be accessed over a TCP/IP network via the Internet Printing Protocol, also known as IPP (for example, a printer attached to another Red Hat Linux system running CUPS (Common Unix Printing System) on the network).
- Networked UNIX (LPD) — a printer attached to a different UNIX system that can be accessed over a TCP/IP network (for example, a printer attached to another Red Hat Linux system running LPD (Line Printer Daemon) on the network).
- Networked Windows (SMB) — a printer attached to a different system which is sharing a printer over a SMB network (for example, a printer attached to a Microsoft Windows™ machine).
- Networked Novell (NCP) — a printer attached to a different system which uses Novell's NetWare network technology.
- Networked JetDirect — a printer connected directly to the network through HP JetDirect instead of to a computer.



Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of IT/Networking Skills

3rd Semester, IInd In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

ITN1305 Optical Fiber Communication **Time: 1 Hour**

Max. Marks: 20

Answer ALL Questions.

Section – A

05x01 = 05 Marks

Q. 1 Which one of the following is correct for **dark fiber**?
A. An unused fiber **B.** Fiber carrying no light **C.** Extra fiber capacity **D.** All are correct

Q. 2 Which one of the following types of lubrication is used by **a blown fiber**?
A. Air **B.** Water **C.** Oil **D.** Nothing

Q. 3 Which one of the following is used to terminate **Loose tube cables** directly with connectors?
A. Splice closure **B.** Breakout kit **C.** Strain relief **D.** Tube stuffer

Q. 4 Which one of the following gives the base color, position and tracer for **D/RS** in a fiber cable?
A. Rose, 23, Black Tracer **B.** Red, 19, Black Tracer
C. Rose, 35, Double Black Tracer **D.** Red, 31, Double Black Tracer

Q. 5 Which one of the following is the **Minimum Bend Radius** for cables being installed (under tension)?
A. 20 times the nominal outside diameter of the cable
B. 10 times the nominal outside diameter of the cable
C. 20 times the nominal inside diameter of the cable
D. 10 times the nominal inside diameter of the cable

Section – B

03x02 = 06 Marks

Q. 1 How are fibers prepared, to terminate with connectors?

Q. 2 What is optical fiber dispersion? List the different types of dispersion phenomena.

Q. 3 List the commonly used cable installation hardware along with their use.

Section – C

03x03 = 09 Marks

Q. 1 Give the difference in **construction** of the following optical fiber cables:
Zipcord cordage cable, Distribution cable, Breakout cable, Armored cable, Messenger cable, Ribbon cable.
Q. 2 Describe the **different intrinsic factors** which cause connector and splice losses in a connection.
Q.3 Explain how cable markings are used to determine the length of a cable.

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Marks 20

Section – A

Objective type questions, each question carries 01 mark. 05x01 = 05 Marks

Q1. D. All are correct
Q2. A. Air
Q3. B. Breakout kit
Q4. A. Rose, 23, Black Tracer
Q5. A. 20 times the nominal outside diameter of the cable.

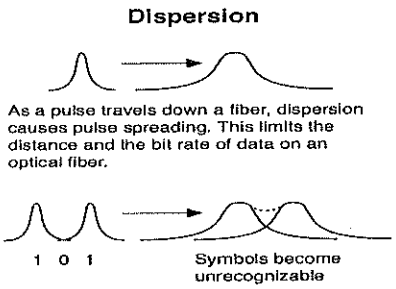
Section – B

Short answer type questions, each question carries 02 marks. 03x02 = 06 Marks

Q1. Cable and fiber preparation steps-:

1. Place cable support (rubber boot) and crimp sleeve onto fiber cable
2. Measure and mark cable and remove outer jacket
3. Insert sheath tube into cable jacket and trim strength member (Kevlar)
4. Measure and mark buffered fiber and remove buffer and fiber coating

Q2. Dispersion is the spreading out of a light pulse in time as it propagates down the fiber.



1. model dispersion
2. material dispersion
3. waveguide dispersion

Q3.

1. Pulling eye – It is used to connect the pull rope to the cable to prevent damage while the cable is being pulled.
2. Pull box - To make the cable easier to pull and to ease the tensile load on it, pull boxes are used.
3. Splice Enclosures – It is a weatherproof encasement, use to envelops the exposed area between spliced cables.

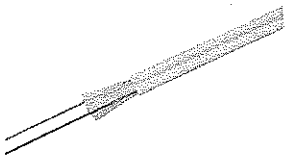
4. Fiber optic patch panel - It is used to terminate the fiber optic cable and provide access to the cable's individual fibers for cross connection.

Section – C

Essay type questions, each question carries 03 marks. 03x03 = 09 Marks

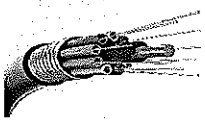
Q1.

- Zipcord cordage cable- It is a two optical fiber/ buffer combination in a jacket. Or It is a combination of two simplex fiber.

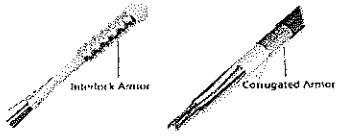


- Distribution cable – It consists of multiple tight buffered fibers bundled in a jacket with a strength member.

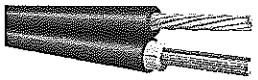
- Breakout cable- It consist two or more simplex cables bundled around a central strength member. **Each fiber has its own jacket** and all of the fibers are packaged together inside the same outer jacket.



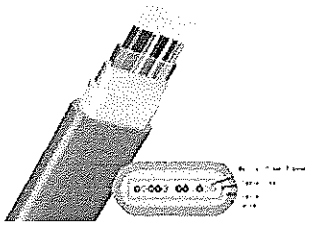
- Armored cable- Armored fiber cable is made with several layers to secure the cable. The plastic outer jacket provides protection against rodent, abrasion and twist. A light steel tube between the optic fibers and the outer jacket, which offers better protection to the fibers in the centre. The Kevlar is placed inside the outer jacket to cover the steel tube.



- Messenger cable- It is a cable with an individual strength member. This strength member allows the cable to be suspended between supports, such as poles or buildings.



- Ribbon cable- The cable ribbons are coated optical fibers placed side by side, encapsulated in Mylar tape, similar to a miniature version of wire ribbons used in computer wiring. Because the ribbon contains only coated optical fibers, this type of cable takes up much less space than individually buffered optical fibers.



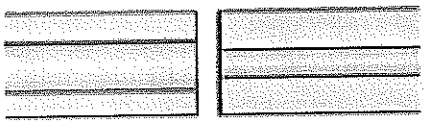
Q2.

Core and cladding diameter mismatch occurs when there is a difference in diameters of core and cladding of the two fibers. When core diameter of the transmitting optical fiber is greater than the core diameter of the receiving optical fiber. When cladding diameter of two are not same, cores of two fibers are not aligned. Because of that losses occurred

Mode field diameter mismatch occurs when there is a difference in mode field diameter of two single mode optical fibers. A loss may occur when the mode field diameter of the transmitting optical fiber is greater than the mode field diameter of receiving optical fiber.

Numerical aperture mismatch occurs when NA of one optical fiber is different from the NA of the other optical fiber. A loss may occur if the NA of the transmitting optical fiber is larger than NA of the receiving optical fiber.

Ferrule bore diameter mismatch occurs when the bore or hole diameter of the transmit ferrule is different from the bore diameter of the bore diameter of the receive ferrule. A loss may occur if the bore diameter mismatch prevents the cores of the optical fiber properly aligning. Mating sleeve diameter mismatch occurs when the diameter of the transmit side of the mating sleeve and the receive side are not the same. A loss may occur when the cores of the optical fibers are not aligned because of the mating sleeve diameter mismatch.



core-diameter mismatch

cladding diameter mismatch

Q3.

Sequential Markings are used to determine length of fiber. They are numbers that appear every 2' or 1m. The numbers themselves indicate cable length, not optical fiber length. To measure the length of the cable using the sequential marking, first determine the measurement standard that is being used. Next subtract the number at the low end from the number at the high end. The difference between the two is the length.

Example

To find the length in meters of a cable that has sequential marking of 846 at one end and 2218 at other end, and the marking are measuring the cable in feet.

The distance between the marking

2218-846=1372 feet

Now, convert feet to meters:

1372* 0.3048=418.2 meters