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Time : 2 Hours Computer Organization and Operating System

Subject Code

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Total No. of Questions : 5 (Printed Pages : 3) Maximum Marks : 50

- INSTRUCTIONS :** (i) All questions are compulsory.
(ii) Figures to the right indicate full marks.
(iii) Write the number of question and sub-question clearly.
(iv) Draw diagrams wherever necessary.
(v) Answer to every question shall start on a fresh page.

1. A) Answer the following in **one word each** : **[2×1=2]**

- (1) State the term used for the transmission of data over some medium.
- (2) Name the term used for the physical layout of connected devices on a computer network.

B) Answer the following : **[2×2=4]**

- (1) Explain half-duplex mode of Data transmission in 3-4 lines.
- (2) State any two characteristics of a Wide Area Network.

C) Answer the following : **[1×4=4]**

- (1) Define Computer Network. Explain wired and wireless networks.

OR

- (2) Explain the Ring Topology with a neat diagram.

2. A) Answer the following in **one word each** : **[2×1=2]**

- (1) Give the term for a workstation that accesses the service made available by a server.
- (2) Name the set of workstations and servers on network of computers administered as a group.

B) Answer the following : [2×2=4]

- (1) State two differences between dedicated and non-dedicated servers.
- (2) Explain Electronic Data Interchange Software (EDI) in 3-4 lines.

C) Answer the following : [1×4=4]

- (1) Explain Peer-to-Peer networking in 6-7 lines with a neat labelled diagram.

OR

- (2) Explain any 4 collaborative processes of the Intranet.

3. A) Answer the following in **one word each** : [2×1=2]

- (1) Name the type of connector commonly used to connect computers using coaxial cable, on a Local Area Network.
- (2) Name the component on the motherboard that provides the hardware interface between a computer and a network.

B) Answer the following : [2×2=4]

- (1) What are Broadband and Baseband LAN cables ?
- (2) Explain in 3-4 lines, the use of Repeaters on a Network.

C) Answer the following : [1×4=4]

- (1) Describe with a neat labelled diagram, the Fibre Optic cable. State two advantages of using the Fibre Optic cable.

OR

- (2) What is a Network Switch ? Explain the role of a Switch on a network in 6-7 lines.

4. A) Answer the following in **one word each** : [2×1=2]

- (1) Name the protocol that is commonly used for internet communication connecting computers throughout the world.
- (2) Name the layer responsible for establishing connections between two end points.

B) Answer the following : [2×2=4]

- (1) Explain IP addressing in 3-4 lines.
- (2) Write two points of difference between IPv4 and IPv6.

C) Answer the following : [1×4=4]

- (1) What is OSI model ? What is the role of the Network layer of the OSI model ? Explain in 6-7 lines.

OR

- (2) What is the role of the presentation layer in the OSI model ? Explain in 3-4 lines.

5. A) Answer the following in **one** word **each** : [2×1=2]

- (1) Write the Linux command which is used to change the permission of a file or directory
- (2) Name the term used for keeping information protected from corruption and unauthorized access.

B) Answer the following : [2×2=4]

- (1) How is packet filtering used to protect Data on network ?
- (2) What is a Firewall ? Explain in 3-4 lines.

C) Answer the following : [1×4=4]

- (1) Write a shell script to input an integer which consists of more than 2 digits. The shell script has to print the integer in reverse as well as compute the sum of the digits in the given integer.
- e.g. Input : 12345
Output : 54321
Sum of digits = 15

OR

- (2) Write a Linux menu driven shell program for the following :

C- copy a file

D- delete a file

A- append a file

The user has to select an appropriate option from the mentioned menu and perform the operation accordingly giving a suitable input, i.e. filename.

The program has to check if the file exists and perform the above selection of choice.