Graphic Era HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Term Evaluation Theory (Even) Semester Regular Examination February 2026

Roll no.... .....

Name of the Course: .Tech (CSE)
Semester: VI
Name of the Paper: Computer Networks – II
Paper Code: TCS614

Time: 1.5 hour **Maximum Marks: 50**

Note:
(i) Answer all the questions by choosing any one of the sub-questions
(ii) Each question carries 10 marks.

Q1. (10 Marks)

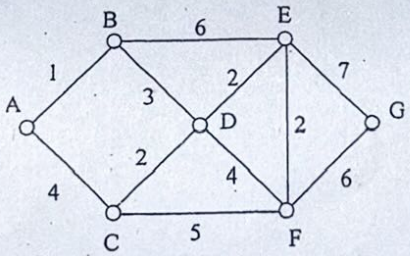
a. Describe the Route Information Protocol (RIP) routing in detail. Differentiate between RIP and OSPF protocols. [CO1]

OR

b. Classify the routing protocols. Explain advantages and disadvantages of each class of routing protocols. [CO1]

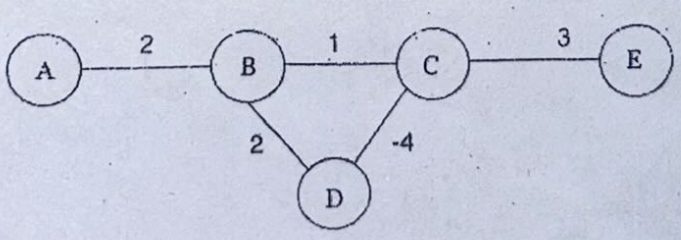
Q2. (10 Marks)

a. Apply the Link State (LS) Routing algorithm on the given network graph and construct the routing table of router 'A'. [CO1]



OR

b. Apply Distance Vector (DV) routing algorithm on the graph below by selecting 'A' as the starting router. Check whether the DV algorithm is able to find a negative weight cycle present in the graph. [CO1]



Q3. (10 Marks)

a. Explain the detailed working of BGP as an Inter-networking protocol. Also explain the eBGP and iBGP sessions. [CO1]

OR

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b. Estimate the channel efficiency in pure and slotted ALOHA channels. [CO3]

Q4. (10 Marks)

a. Design an algorithm to generate transmitted bits T(x) using Message Polynomial M(x) and Generating Polynomial G(x) by using CRC technique. [CO2]

OR

b. What are some of the possible services that a data link-layer protocol can offer to the network layer? Which of these data link-layer services have corresponding services in IP? In TCP? [CO2]

Q5. (10 Marks)

a. (i) A bit string, 0111101111101111110, needs to be transmitted at the data link layer. What is the string actually transmitted after bit stuffing? [CO2]

(ii) Suppose that a message 1001 1100 1010 0011 is transmitted using Internet Checksum (4-bit word). What is the value of the checksum? [CO2]

OR

b. What are various services provided by connecting devices (i) Switch and (ii) router. Also differentiate between these two connecting devices.

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