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Number of printed pages: 01

Semester IV (B.Tech.)

Er. No. 2018308

Academic Year: 2021-22

Jaypee University of Engineering & Technology, Guna**T-1 (Even Semester 2022)****18B11CI411 – COMPUTER NETWORKS**

Maximum Duration: 1 Hour

Maximum Marks: 15

Notes:

1. This question paper has **five** questions.
2. Write relevant answers only.
3. Do not write anything on question paper (Except your Er. No.).

- | | Marks |
|---|--------------|
| Q1. (a) An image is 1024×768 pixels with 3 bytes/pixel. Assume the image is uncompressed. How long does it take to transmit it? | [02] 2 |
| (i) Over a 10 Mbps, | |
| (ii) Over a 100 Mbps. | |
| (b) What are the three criteria necessary for an effective and efficient network? | [01] 1/2 |
| Q2. (a) Explain the three transmission modes in detail. | [01] 1 |
| (b) For n devices in a network, what is the number of cable links required for a mesh, ring, bus, and star topology? | [02] 2 |
| Q3. (a) A signal has passed through three cascaded amplifiers, each with a 5dB gain. What is the total gain? How much is the signal amplified? | [02] 1 |
| (b) Name the three types of transmission impairments? | [01] 1 |
| Q4. Summarize the functions of each layer in OSI reference model. | [03] 3 |
| Q5. (a) How many FM radio stations can be allocated in India, if each FM radio station is assigned 200 kHz bandwidth? | [02] 0.5 |
| (i) With guard band of 100 kHz. | |
| (ii) Without any guard band. | |
| (b) Differentiate between physical and logical addressing utilized in TCP/IP model. | [01] 0 |