

JK Lakshmipat University, Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination, May 2022
B. Tech. (EEE), Semester VI, 2021-22

Roll No.....

EE1208: Digital Communication Networks

Time: 3 hours

Max. Marks: 30

Instructions to students: Answer ALL questions

1. Do not write anything other than your roll number on question paper
2. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever required are an integral part of the answer
3. Use of programmable calculator, class lecture notes/handouts, etc., are not allowed
4. Assume suitable data wherever required and mention it clearly

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- Q. 1 A user avails average call duration of 2 minutes. The average number of call requests per hour is 6. In this mobile cellular traffic scenario, 5
(CO 5 & 7)
- (i) Calculate the traffic intensity in erlangs if there are 200 users
- (ii) Justify the case when a call is never blocked
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- Q. 2 In terms of call management and mobility management, justify how the cellular network protocol stacks provide radio resource management. (Concentrate only on application layer and data link layer). 6
(CO 1, 2, 3 & 8)
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- Q. 3 Physical and MAC layers suffer loss of frames (unreliability) in presence of noise, interference, propagation effects, etc. Assess how this situation is overcome by IEEE 802.11 WLAN standards, thus providing reliable data recovery. 5
(CO 4 & 8)
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- Q. 4 Show how the basic building block STS-1, OC-1, STM-0, SONET frame achieves a bit rate of 51.84 Mbps. Construct the 3 – level section-line-path structure of the SONET frame physical architecture, indicating the various terminating equipment. 6
(CO 6 & 7)
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- Q. 5 Sketch and illustrate the route discovery and maintenance process (algorithm) for AODV and DSR protocols. 8
(CO 3, 6 & 8)
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