G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI - 628 502.



UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2024.

(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., ELECTRONICS

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
IV	PART-III	CORE ELECTIVE	U21EL4E2A	ADVANCED COMMUNICATION SYSTEMS

Date & Session: 14.11.2024/FN Time: 3 hours Maximum: 75 Marks Outcome Bloom's Course K-level Q. SECTION – A $(10 \times 1 = 10 \text{ Marks})$ Answer ALL Questions. No. CO1 K1 1. The process of using a pulse signal to represent information is called ___ a) Pulse modulation b) Frequency modulation c) Amplitude modulation d) Phase modulation CO1 K2 2. Quantization noise can be reduced by ____ the number of levels. a) Decreasing b) Increasing c) Doubling d) Squaring What type of digital modulation is widely used for digital data transmission? CO2 K1 3. a) Pulse amplitude modulation b) Pulse width modulation d) Pulse code modulation c) Pulse position modulation CO₂ K2 FSK reception is 4. a) Phase Coherent b) Phase non coherent c) Phase Coherent & non coherent d) universal CO₃ K1 The transmitter-receiver combination in the satellite is known as a 5. a) Relay b) Repeater c) Transponder d) Duplexer CO3 K2 6. What is the reason for shifting from c band to ku band in satellite communication? a) Lesser attenuation b) Less power requirements c) More bandwidth d) Overcrowding Why neighbouring stations are assigned different group of channels in CO₄ K1 7. cellular system? a) To minimize interference b) To minimize area c) To maximize throughput d) To maximize capacity of each cell CO₄ K2 What is frequency reuse? 8. a) Process of selecting and allocating channels b) Process of selection of mobile users c) Process of selecting frequency of mobile equipment d) Process of selection of number of cells CO₅ K1 9. TDMA is a multiple access technique that has ______. a) Different users in different time slots b) Each user is assigned unique frequency slots c) Each user is assigned a unique code sequence d) Each signal is modulated with frequency modulation technique CO₅ K2 10. GSM is an example of _ a)TDMA cellular systems b) FDMA cellular systems c) CDMA cellular systems d) SDMA cellular systems

Course Outcome	Bloom's K-level	Q. No.	$\frac{\text{SECTION} - B \text{ (5 X 5 = 25 Marks)}}{\text{Answer } \underline{\text{ALL Questions choosing either (a) or (b)}}$
CO1	К3	11a.	Describe the elements of communication systems. (OR)
CO1	КЗ	11b.	Compare PCM and DM systems.
CO2	КЗ	12a.	Illustrate the function of coherent ASK detector. (OR)
CO2	КЗ	12b.	Describe the probability error of ASK and FSK.
CO3	K4	13a.	State and explain the kepler's law. (OR)
CO3	K4	13b.	Discuss global positioning system and its applications.
CO4	K4	14a.	Explain the concept of frequency reuse. (OR)
CO4	K4	14b.	Analyze cell splitting and sectoring.
CO5	K5	15a.	Evaluate the performance of CDMA technology. (OR)
CO5	K5	15b.	Explain the difference between wireless and fixes telephone networks.

Course Outcome	Bloom's K-level	Q. No.	$\frac{\text{SECTION} - C \text{ (5 X 8 = 40 Marks)}}{\text{Answer } \frac{\text{ALL}}{\text{Questions choosing either (a) or (b)}}$
CO1	КЗ	16a.	Explain in detail the function of differential pulse code modulation with neat diagram. (OR)
CO1	К3	16b.	Explain the function of delta modulation and its drawback.
CO2	K4	17a.	Describe the operation of non-coherent FSK with neat sketch. (OR)
CO2	K4	17b.	Describe the operation of coherent reception of QPSK with neat sketch.
CO3	K4	18a.	Illustrate the working of satellite antennas. (OR)
CO3	K4	18b.	Discuss in detail about transponders in satellite communication.
CO4	K5	19a.	Briefly explain the concept of hand off strategies and explain its types. (OR)
CO4	K5	19b.	Explain in detail the cell splitting and cell sectoring concept incellular communication.
CO5	K5	20a.	Compare FDMA with TDMA. (OR)
CO5	K5	20b.	Draw the architecture of GSM and explain in detail.