AR18

CODE: 18CEE431 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular Examinations, February-2022

REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM

(Civil Engineering)

Time: 3 Hours **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	What is electromagnetic spectrum? Explain with a neat sketch.	6M
	b)	Explain the different divisions of electromagnetic spectrum with reference to wavelengths	6M
		(OR)	
2.	a)	Explain about EMR's interaction with earth's surface.	6M
	b)	Explain in detail the spectral signatures of vegetation and soil	6M

UNIT-II

3.	a)	List out the important satellites and their sensors.	6M
	b)	What are the bands and their uses of Landsat ETM?	6M
		(OR)	
4.	a)	Explain about passive sensors and their applications.	6M
	b)	Discuss the various digital image data formats.	6M

UNIT-III

5.	a)	Explain the following Image Enhancement Techniques (i) Image Reduction & Magnification (ii) Contrast Enhancement	6M
	b)	Write about multi spectral image classification	6M
		(OR)	
6.	a)	Explain in detail about the digital image processing.	6M
	b)	What are the different types of data products?	6M

UNIT-IV

7.	a)	Give comparison between vector and raster data structures.	6M
	b)	Classify data in GIS context and explain spatial data editing.	6M
		(OR)	
8.	a)	What is the importance of map projections in GIS? Explain.	6M
	b)	Give the details of vector data structure and mention its merits and demerits in comparison with raster data.	6M

UNIT-V

9.	a)	Discuss briefly how remote sensing and GIS plays an important role in land use / land cover studies.	6M
	b)	Discuss the various raster overlay operations.	6M
		(OR)	
10.	a)	Discuss overlay using a decision table.	6M
	b)	Explain the importance of overlaying index methods in GIS.	6M

AR18

CODE: 18EET417 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular Examinations, February-2022

ELECTRICAL DISTRIBUTION SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 Hours **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Obtain the relation between the load factor and loss factor.	6M
	b)	Explain about radial distribution system with a help of neat sketch.	6M
		(OR)	
2.	a)	Explain design aspects of secondary distribution system with diagram.	8M
	b)	Explain factors effecting selection of rating of feeder.	4M
		UNIT-II	
3.	a)	Explain how to decide the rating of a distribution substation.	4M
	b)	Compare four and six feeder patterns in substation location for equal voltage drop and equal thermal limited	8M
		(OR)	
4.		How do you analyse a substation service area with 'n' primary feeders?	12M
		UNIT-III	
5.	a)	Prove the power loss due to load currents in the conductors of the 1-phase lateral with ungrounded neutral case is 2 times larger than one in the equivalent 3-phase lateral.	6M
	b)	A single phase feeder circuit has total impedance of (1+j3) and $V_R=2400\angle 0^0$ and $I_R=50\angle 30^0$ A respectively. Find, i) Power factor of the load ii) Load PF for which the drop is maximum.	6M
		(OR)	
6.	a)	Consider a single-phase, 2-wire secondary distributor of length 'l' meters from the distribution transformer. At a length of 'l_1' meters from source, a load of 'I_1' amps with a p.f. of cos φ_1 (lag) is tapped. At a length of 'l_2' meters from first load, a second load of 'I_2' amps with a power factor cos φ_2 (lead) is taped. At a length of 'l_3' meters from second load, a third load of 'I_3' amps with a UPF is tapped. If resistance and reactance of each wire are r and x ohms/meter respectively, derive approximate voltage drop equation in the distributor.	6M
	b)	Derive an approximate voltage drop and power loss equation of primary feeder and give the condition for load p.f at which voltage drop is maximum.	6M
		UNIT-IV	
7.	a)	Explain the principle of operation of line sectionalizers.	6M
	b)	Explain the principle of operation of fuse .	6M
		(OR)	
8.	a)	Explain coordination procedure between two fuses.	6M
	b)	Explain recloser – circuit breaker coordination.	6M
		UNIT-V	
9.	a)	What are the effects of shunt and series capacitors in distribution system.	6M
	b)	Write a short notes on power factor correction.	6M
		(OR)	
10.	a)	With the help of a phasor diagram show how a series capacitor boosts the voltage. What are the drawbacks of this method.	6M
	b)	Write the ways to improve overall voltage regulation.	6M

AR18

CODE: 18MEE431 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular Examinations, February,2022

REFRIGERATION AND AIR CONDITIONING

(MECHANICAL ENGINEERING)

(Steam and Refrigeration tables are allowed)

Time: 3 Hours **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. a) Define the refrigerator and write its applications. (4 M)
   b) An ice plant produces 10×10^3 kg of ice per day at 0°C using water at a temperature of 25°C. Estimate the power required by the compressor motor, if the COP of the plants is 3.2 and the transmission efficiency is 88%. Also find the amount of heat transferred from the system per minute. Take C_p (water) = 4.2 kJ/kg - K, and h_{fg}(ice) = 334.5 kJ/kg. (8 M)

(OR)

2. a) What are the various processes involved in Reversed Brayton Cycle and represent it on T-S diagram. (4 M)
   b) A simple air cooled system is used for an aeroplane to take a load of 10 tons. Atmospheric temperature and pressure is 25°C and 0.9 atm respectively. Due to ramming the pressure of air is increased from 0.9 atm, to 1 atm. The pressure of air leaving the main compressor is 4.5 atm and its 50% heat is removed in the air-cooled heat exchanger and then it is passed through a evaporator for future cooling. The temperature of air is reduced by 10°C in the evaporator. Lastly the air is passed through cooling turbine and is supplied to the cooling cabin where the pressure is 1.03 atm. Assuming isentropic efficiency of the compressor and turbine are 85% and 80%, find a) Power required to take the load in the cooling cabin b) COP of the system. The temperature of air leaving the cabin should not exceed 25°C. (8 M)

UNIT-II

3. a) Write the refrigerant nomenclature for i) Dichloro-tetrafluoro-ethane ii) Dichloro-difluoro-methane. (4 M)
   b) An ideal vapour compression system uses R-12 as the refrigerant. The system uses an evaporation temperature of 0°C and a condenser temperature of 40°C. The capacity of the system is 6 TR. Determine (a) The mass flow rate of refrigerant, (b) Power required to run the compressor, (c) Heat rejected in the condenser. Use the properties of R-12 from the table given below. (8 M)

Temp. °C	Pressure, bar	h_f, kJ/kg	h_g, kJ/kg	s_f, kJ/kg-K	s_g, kJ/kg-K
0	3.087	36.05	187.53	0.142	0.696
40	9.609	74.59	203.2	0.727	0.682

(OR)

4. a) Explain the effect on efficiency of the reversed Rankine cycle (vapour compression cycle) by i) Lowering the Condenser Pressure ii) Superheating the Steam to High Temperatures (4 M)

   b) A refrigeration plant of 7 TR capacity has its evaporation temperature of - 6^{O}C and condenser temperature of 31^{O}C. The refrigerant is sub-cooled by 5^{O}C before entering into the expansion and vapour is superheated by 6^{O}C before leaving the refrigerator. The suction pressure drop is 0.3 bar in the suction valve and discharge pressure drop is 0.1 bar in the discharge valve. If the refrigerant used is R-12, find out the C.O.P of the plant and theoretical power required for the compressor. Assume compression is isentropic. (8 M)

UNIT-III

5. a) What are the functions of each fluid in three fluid vapour absorption refrigeration system. (4 M)

   b) Explain Aqua Ammonia vapour absorption refrigeration system with a neat sketch, specify advantages and disadvantages. (8 M)

(OR)

6. a) What are the essential components of vapour absorption refrigeration system explain. (6 M)

   b) Explain two-shell Li-Br water vapour absorption refrigeration system with a neat sketch. (6 M)

UNIT-IV

7. Explain the construction and working of pulse tube refrigeration system with a neat sketch, specify its applications, merits and demerits. (12 M)

(OR)

8. a) Explain the working principle of thermoelectric refrigeration system, specify advantages and disadvantages. (6 M)

   b) With a neat sketch, explain the construction and working of vortex tube refrigeration system. (6 M)

UNIT-V

9. a) Define i) WBT ii) DBT iii) DPT iv) Wet bulb depreciation v) ADP vi) Bypass factor. (6 M)

   b) An HVAC&R operator measured the dry- and wet-bulb temperatures in an air conditioned space as 23.9°C and 17.2°C, respectively. Find the relative humidity of this air conditioned space. The humidity ratios of the saturated air at temperatures of 23.9°C and 17.2°C are 0.018809 and 0.012355 (kg/kg), respectively. (6 M)

(OR)

10. a) What are the various methods used to humidify the air, explain any one. (6 M)

    b) Atmospheric air at 760 mm of Hg, 15 °C DBT and 11°C WBT enters a heating coil, whose temperature is 41°C. The by-pass factor of the coil is 0.5. Calculate DBT, WBT and the relative humidity of air leaving the coil. (6 M)

AR18

CODE: 18ECE431 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular Examinations, February-2022

WIRELESS COMMUNICATION SYSTEMS

(Electronics and Communication Engineering)

Time: 3 Hours **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Draw the basic block diagram of a cellular systems and briefly explain its key terminologies.	6M
	b)	Explain about the mobile radio transmission systems and its classification. Simplex, Half Duplex, Full Duplex-FDD, & Full Duplex-TDD	6M
		(OR)	
2.	a)	Define the following terminologies in wireless communication systems. Page, Roamer, Subscriber, Frequency division duplexing, &Time division duplexing	6M
	b)	Briefly explain about the operations involved in in call establishment initiated by a mobile user with a simple timing diagram	6M

UNIT-II

3.	a)	Compare the FDMA, TDMA and CDMA multiple access techniques with neat diagrams	6M
	b)	Explain about the Space Division Multiple Access (SDMA) with a diagram	6M
		(OR)	
4.	a)	Explain about CDMA & its implementation using direct sequence spread spectrum (DSSS) with a neat diagram.	12M

UNIT-III

5.	a)	Briefly explain about the 2G standards employed with TDMA	6M
	b)	With the network architecture block diagram, explain about the Enhanced data rates for global evolution (EDGE)	6M
		(OR)	
6.	a)	Explain about the features of 3G mobile communications and list out the 3G air interfaces.	6M
	b)	What is mean by paired and unpaired spectrum in 3G? and list out the limitations of 3G.	6M

UNIT-IV

7.	a)	Explain about Wireless PANs and list any four applications	6M
	b)	Compare ad-hoc and infrastructure network topologies in WLANs	6M
		(OR)	
8.	a)	Explain about Hidden node problem in IEEE 802.11.	6M
	b)	With the architecture diagram, explain about HIPERLAN/1.	6M

UNIT-V

9.	a)	Explain about the LR-WPAN device architecture with a block diagram	6M
	b)	Explain about WiMAX architecture with a block diagram	6M
		(OR)	
10.	a)	Explain about Mobile ad-hoc networks (MANETs) and its topologies	8M
	b)	Brief about the different types of ZigBee devices	4M

AR18

CODE: 18CSE442 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular Examinations, February,2022

INTERNET OF THINGS

(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Write about physical design of IOT	(6m)
	b)	Explain logical design of IOT	(6m)
		(OR)	
2.	a)	Discuss logistics IOT	(6m)
	b)	Write about health and life style IOT	(6m)

UNIT-II

3.	a)	Explain SDN and NFV	(6m)
	b)	What is NETCONF	(6m)
		(OR)	
4.	a)	Discuss in detail SNMP	(6m)
	b)	How does M2M communication work? Explain	(6m)

UNIT-III

5.	a)	Explain about python data types and data structures	(6m)
	b)	Discuss logical design using python	(6m)
		(OR)	
6.	a)	Write about Date/Time operation	(6m)
	b)	What are python packages for IOT	(6m)

UNIT-IV

7.	a)	Explain about Raspberry pi	(6m)
	b)	Discuss in detail about DJango application frame work with example.	(6m)
		(OR)	
8.	a)	What are communication APIs	(6m)
	b)	Explain Xively cloud for IOT	(6m)

UNIT-V

9.		Design productivity application using IOT	(12m)
		(OR)	
10.	a)	What is Apache Hadoop	(6m)
	b)	Explain usage of Apache storm for real time data analysis	(6m)

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AR18

CODE: 18ITE441 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular Examinations, February-2022

ADVANCED UNIX PROGRAMMING

(Information Technology)

Time: 3 Hours **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Give the features of UNIX operating system.	6M
	b)	Describe the following commands: i)wc ii) df iii) ftp	6M
		(OR)	
2.	a)	Draw and explain the file system in UNIX.	6M
	b)	Describe the following commands: i)cut ii) tr iii) umask	6M

UNIT-II

3.	a)	List and explain the functions of the shell.	6M
	b)	Write a Shell Script to take user data as command line argument and display a greetings message	6M
		(OR)	
4.	a)	Explain about here document.	6M
	b)	Write a shell script to reverse a string.	6M

UNIT-III

5.	a)	Describe the following directory API: i)chdir() ii) getcwd() iii) readdir()	6M
	b)	Explain about orphan process and zombie process.	6M
		(OR)	
6.	a)	Explain the following system calls: i)read() ii) link() iii) stat()	6M
	b)	Discuss killing a process with examples.	6M

UNIT-IV

7.		What is interrupted system calls? Hoe can they be handled?	12M
		(OR)	
8.	a)	Explain kill() and raise() signals.	6M
	b)	Categorize various classes of signals.	6M

UNIT-V

9.	a)	Write short notes on pipes in inter process communication.	6M
	b)	Explain the communication between processes via the message passing method.	6M
		(OR)	
10.	a)	List and explain the various approaches to Inter process Communication.	6M
	b)	Write short notes on synchronization in Inter process Communication.	6M

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AR16

CODE: 16CE4025 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular & Supplementary Examinations, February-2022

REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM

(Civil Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Outline EMR and indicate UV, Visible and IR portion.	7M
	b)	Draw the various spectral signatures of the Earth's surface materials and explain how the EMR is interacting with water?	7M
		(OR)	
2.	a)	What is meant by atmospheric windows and explain it with a neat sketch?	7M
	b)	Briefly List out IRS Satellites.	7M

UNIT-II

3.	a)	Differentiate between Active Remote sensing and Passive Remote sensing.	7M
	b)	Illustrate the types of orbits with neat diagrams?	7M
		(OR)	
4.	a)	Explain the various data products of Indian remote sensing.	7M
	b)	Discuss briefly about various types of platforms.	7M

UNIT-III

5.		Review in detail about the various elements of image interpretation in remote sensing.	14M
		(OR)	
6.		Show the flow chart of image classification? Explain the supervised classification?	14M

UNIT-IV

7.	a)	Explain Azimuthal projection and its significance.	7M
	b)	Describe the parameters of projection.	7M
		(OR)	
8.	a)	Describe about GIS data file management.	7M
	b)	Classify data in GIS context and explain spatial data editing.	7M

UNIT-V

9.	a)	Evaluate on sustainable urban planning with respect to RS.	7M
	b)	Explain the applications of RS in civil engineering.	7M
		(OR)	
10.	a)	Explain Applications of RS & GIS in various fields.	7M
	b)	Analyze the study of agriculture with the help of RS & GIS.	7M

AR16

CODE: 16EE4025 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular & Supplementary Examinations, February-2022

HIGH VOLTAGE ENGINEERING

(Electrical and Electronics Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Explain how the electric stress can be estimated and controlled	7M
	b)	Describe the charge simulation method for evaluation of field distribution.	7M
		(OR)	
2.		Describe Finite Element Method for evaluation of field distribution. Discuss the procedure associated with this method and mention its advantages and limitations.	14M

UNIT-II

3.		Explain in detail about the breakdown methods in solid Dielectrics?	14M
		(OR)	
4.	a)	State and explain Paschen's law.	7M
	b)	Discuss the different commercial liquid used in practice	7M

UNIT-III

5.		Describe the principle of operation generating voltmeter used for the measurement of high D.C voltages and state it's advantages and limitation.	14M
		(OR)	
6.		Describe the different methods for generating of alternating voltage with neat diagram.	14M

UNIT-IV

7.	a)	Explain the transformer ratio arm bridge for audio frequency range measurements. Discuss its merits and demerits over other methods	7M
	b)	Write a short note on discharge detection in power cables.	7M
		(OR)	
8.		Explain the different methods for testing for circuit breakers with neat diagram.	14M

UNIT-V

9.		Explain the operation and principle of electrostatic precipitator with neat diagrams	14M
		(OR)	
10.	a)	Explain the working principle of Electro Static Precipitator	7M
	b)	Explain the working of Electro static separator	7M

AR16

CODE: 16ME4027 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, February, 2022

HEAT TRANSFER

(Mechanical Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place
(Heat transfer data book may be permitted)

UNIT-I

1. a) Derive the general heat conduction equation in Cartesian coordinates and deduce 1-Dimensional steady state equation with no internal heat generation. 9M

   b) The wall of a cold room is composed of three layer. The outer layer is brick 30 cm thick. The middle layer is cork 20 cm thick, the inside layer is cement 15 cm thick. The temperatures of the outside air is 25°C and on the inside air is -20°C. The film co-efficient for outside air and brick is 55.4 W/m^2K. Film co-efficient for inside air and cement is 17 W/m^2K. Find heat flow rate. Take 5M

   K for brick = 2.5 W/mK
   K for cork = 0.05 W/mK
   K for cement = 0.28 W/mK

(OR)

2. a) A thick walled tube of stainless steel [K = 77.85 kJ/hr m°C] 25 mm ID and 50 mm OD is covered with a 25 mm layer of asbestos [K = 0.88 kJ/hr m°C]. If the inside wall temperature of the pipe is maintained at 550°C and the outside of the insulator at 45°C. Calculate the heat loss per meter length of the pipe. 9M

   b) Derive an expression for critical thickness of insulation for a cylinder. 5M

UNIT-II

3. a) Derive an expression for temperature distribution of lumped heat system. 5M

   b) A copper plate 2 mm thick is heated up to 400°C and quenched into water at 30°C. Find the time required for the plate to reach the temperature of 50°C. Heat transfer co-efficient is 100 W/m^2K. Density of copper is 8800 kg/m^3. Specific heat of copper = 0.36 kJ/kg K. 9M
   Plate dimensions = 30 × 30 cm.

(OR)

4. a) Explain about effectiveness and efficiency of fins. 5M

   b) In an experiment to determine the thermal conductivity of a long solid 2.5 cm diameter rod, its base is placed in a furnace with a large portion of it projecting into the room air at 22°C. After steady state conditions prevail, the temperatures at two points, 10 cm apart, are found to be 110°C and 85°C respectively. The convective heat transfer coefficient between the rod surface and the surrounding air is 28.4 W/m^2K. Determine the thermal conductivity of the rod material. 9M

UNIT-III

5. a) Mention the points to be considered while selecting the m repeating variables in Buckingham's π theorem. 5M
   b) Using dimensional analysis, obtain an expression for relation among the different non dimensional numbers in the case of free convection. 9M

(OR)

6. a) Explain the concept of boundary later thickness. 5M
   b) Air at 30°C, Flows over a flat plate at a velocity of 4 m/s. The plate measures 50 × 30 cm and is maintained at a uniform temperature of 90°C. Determine the heat loss from the plate when the air flows Parallel to 50 cm side. 9M

UNIT-IV

7. A vertical pipe 80 mm diameter and 2 m height is maintained at a constant temperature of 120°C. The pipe is surrounded by still atmospheric air at 30°C. Find heat loss by natural convection. 14M

(OR)

8. a) Define pool boiling and explain various regimes in pool boiling curve with a neat diagram. 6M
   b) Derive LMTD expression for parallel flow heat exchanger. 8M

UNIT-V

9. a) What is view factor? Give some examples of view factor value of 0 and 1 with sketch. 6M
   b) A black body at 3000 K emits radiation. Calculate the following: 8M
      i) Monochromatic emissive power at 7 μm wave length.
      ii) Wave length at which emission is maximum.
      iii) Maximum emissive power.
      iv) Total emissive power,
      v) Calculate the total emissive power of the furnace if it is assumed as a real surface having emissivity equal to 0.85.

(OR)

10. a) Explain the terms absorptivity, reflectivity and transmissivity. 6M
    b) Calculate the heat exchange by radiation between the surfaces of two long cylinders having radii 120mm and 60mm respectively. The axis of the cylinder are parallel to each other. The inner cylinder is maintained at a temperature of 130°C and emissivity of 0.6. Outer cylinder is maintained at a temperature of 30°C and emissivity of 0.5. 8M

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AR16

CODE: 16EC4030 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular & Supplementary Examinations, February-2022

SATELLITE COMMUNICATIONS

(Electronics and Communication Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Discuss the future trends and advanced concepts relating to the satellite communication	7M
	b)	Draw a basic block diagram of satellite communication system and explain each block in detail.	7M
		(OR)	
2.	a)	Explain the frequency allocations for satellite services	7M
	b)	Why the uplink frequency is always greater than the downlink frequency in satellite communication? Explain.	7M
		UNIT-II	
.	a)	Explain the launching procedure of geo-stationary satellites using launch vehicles. Give diagrams	7M
	b)	Explain in detail about Orbit perturbations.	7M
		(OR)	
4.	a)	Derive the expression for the time period of satellite's orbit.	7M
	b)	A satellite is in an elliptical orbit with a perigee of 1000 km and an apogee of 4000 km. using a mean earth radius of 6378.14 km, find the period of the orbit.	7M
		UNIT-III	
5.	a)	Write notes on: (i) Space qualification (ii) Satellite antenna equipment reliability	7M
	b)	Differentiate the multiplexing and multiple access techniques	7M
		(OR)	
6.	a)	What are the various subsystems in the satellite? Explain the power system.	7M
	b)	Explain about different satellite antennas.	7M
		UNIT-IV	
7.	a)	Explain the concept of design of uplink in satellite communication.	7M
	b)	Explain about satellite switched TDMA.	7M
		(OR)	
8.	a)	What is G/T ratio of a satellite link? Derive the expression for it	7M
	b)	Explain the principle of DAMA with an example	7M
		UNIT-V	
9.	a)	Which factors influences the design of any satellite communication systems? Explain.	7M
	b)	Explain the terminal characteristics and common requirements of NGOS	7M
		(OR)	
10.	a)	Draw the general configuration of an earth station and explain each block	7M
	b)	What are the different satellite constellation designs? Explain any one	7M

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AR16

CODE: 16CS4027 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Regular & Supplementary Examinations, February-2022

MOBILE COMPUTING

(Common to CSE and IT)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Describe the limitation of mobile communications.	7M
	b)	Explain location dependent services in mobile communications.	7M
		(OR)	
2.	a)	Explain the different types of networks supported to mobile communications	6M
	b)	Explain the mobile computing architecture for a mobile device.	8M

UNIT-II

3.	a)	Explain briefly about various services offered by GSM.	7M
	b)	Define handover and explain different handovers of the GSM	7M
		(OR)	
4.	a)	Give the neat sketch of GSM structure with subsystems. List and explain the various databases maintained. Explain how they are useful	14

UNIT-III

5.	a)	Why do Hidden and Exposed terminal problems arise? How it will affect the wireless networks?	7M
	b)	What are the differences between SDMA , TDMS, FDMA, and CDMA?	7M
		(OR)	
6.	a)	Why the CSMA/CA is suitable for wireless Networks? Explain with a neat flow chart.	7M
	b)	Explain the features of 4G networks?	7M

UNIT-IV

7.	a)	Explain about entities and terminology in mobile Network Layer	7M
	b)	With the help of diagram, explain how IP packets are transferred from fixed node to mobile node	7M
		(OR)	
8.	a)	Write a short note on Agent advertisement and registration of agent discovery in mobile Network	7M
	b)	What is the use of DHCP? And explain the client initialization process via DHCP	7M

UNIT-V

9.	a)	What are the limitations of Traditional TCP?	5M
	b)	Explain about snooping TCP with neat diagram and mention the drawbacks of Snooping TCP.	9M
		(OR)	
10.	a)	Difference between Proactive and reactive routing protocols.	7M
	b)	Explain about DSR protocol with a neat labelled diagrams	7M