AR18

CODE: 18CET310 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June-2022

ENVIRONMENTAL ENGINEERING-I

(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) Estimate the population for the years 2021, 2031 and 2041 from the following past census data by Arithmetic increase method and Geometrical increase method. 7 M

Census Yr.	1951	1961	1971	1981	1991	2001
Population	25000	27800	35000	43000	52000	60000

b) What is design period? Discuss the factors affecting the design period? 5 M

(OR)

2. a) Describe briefly the various sources of water available for water supply? 7 M
b) What are 'infiltration galleries' and 'infiltration wells'? 5 M

UNIT-II

3. a) Explain the chemical characteristics of water? 7 M
b) Write the desirable limits as per IS 10500 -2012 and their effects when they exceed their limits (i) Hardness, (ii) Nitrates, (iii) Fluorides and (iv) Alkalinity 5 M

(OR)

4. a) Draw the line diagram of a typical water treatment plant and briefly describe the treatment units 7 M
b) Draw the flow sheet for the treatment of Ground water containing iron and manganese or other dissolved gases like CO_2, H_2S etc. 5 M

UNIT-III

5. a) Design a rectangular sedimentation tank for 1 lakh population. Assume any other data needed. 7 M
b) Explain the theory of sedimentation? 5 M

(OR)

6. a) Describe how alum acts as a coagulant, with relevant equations. 7 M
b) What is meant by coagulation? What are the common coagulants used? 5 M

UNIT-IV

7. a) Differentiate between the slow sand and rapid sand filters. 7 M
b) Explain the theory of filtration? 5 M

(OR)

8. a) Explain the methods for removal of colour, odour and taste? 7 M
b) Write short notes on i) Post Chlorination ii) Break point chlorination iii) Super Chlorination iv) Dechlorination 5 M

UNIT-V

9. a) Explain the methods of distribution system? 7 M
b) How is the capacity of a balancing reservoir determined? 5 M

(OR)

10. a) Explain the important methods of analysis of distribution system? 7 M
b) What are the general requirements of a water distribution system? 5 M

AR18

CODE: 18EET310 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June-2022

POWER ELECTRONICS

(Electronics and Electrical 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)	Explain operation of MOSFET along with its characteristics.	6M
	b)	Draw and explain the construction and operation of a IGBT	6M
		(OR)	
2.	a)	Draw and explain the construction and operation of a thyristor.	6M
	b)	Discuss various turn-on methods of SCRs.	6M

UNIT-II

3.	a)	Explain the operation of single phase fully controlled converter with R- load. Draw the relevant waveforms and derive the expression for average load voltage	6M
	b)	A 1- phase fully controlled midpoint rectifier is given 230 V, 50 Hz supply. The firing angle is 60 ˚ and the load is highly inductive. Determine i) Average output voltage and current ii) Input Power factor	6M
		(OR)	
4.	a)	Derive an expression for i) Average load voltage ii) Average load current iii) RMS load voltage iv) input Power Factor of 1-phase half-controlled bridge converter with R-L load.	6M
	b)	A single phase half wave converter is used to supply power to a load of impedance 20 ohms from 230V, 50Hz a.c. supply at a firing cycle of 45^0. Calculate (a)Average value of voltage , (b)Effective value of voltage,(c) Load current, (d)Line power factor	6M

UNIT-III

5.	a)	Describe with a neat circuit diagram the basic principle of dual converter.	6M
	b)	A 3 phase , fully controlled bridge converter is supplying dc load of 400V, 50A from a 3 phase 50Hz, 660V (line) supply, if the thyristors have a voltage drop of 1.2V when conducting , then neglecting overlap , compute (i) Firing angle of thyristor, (ii) Rms value of thyristor currents, (iii) Mean power loss in thyristors	6M
		(OR)	
6.	a)	Explain the operation with output waveforms of a three phase half wave converter with R-load. Also derive the expression for average output voltage	6M
	b)	Describe the operation of 3-phase dual converter with circulating current mode along associated waveforms and circuits	6M

UNIT-IV

7.	a)	Explain the operation of single phase ac voltage controller with R load. And obtain expression for rms output voltage, rms output current and input power factor	6M
	b)	A 1-ϕ full wave AC voltage controller feeds of R=10Ωwith input voltage of 230,50HZ.Calculate (i)rms value of output voltage (ii) input power factor at $\alpha=60^o$	6M
		(OR)	
8.	a)	Describe principle of working of 1 –Θ to 1 –Θ step down midpoint type cyclo-converter for discontinuous conduction mode.	6M
	b)	Explain the operation of single phase ac voltage controller with RL- load. And obtain expression for rms output voltage, rms output current and input power factor	6M

UNIT-V

9.	a)	Explain the operation of 1 –Θ bridge inverter with RL load.	6M
	b)	Discuss about the voltage control by means of PWM techniques.	6M
		(OR)	
10.	a)	With a neat circuit diagram, explain the principle of operation of a buck converter.	6M
	b)	Explain the operation of step up and step down chopper with neat sketch.	6M

AR18

CODE: 18MET308 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June-2022

HEAT AND MASS TRANSFER

(Mechanical 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)	State Newton's law of cooling and write its mathematical equation for convection heat transfer. Describe each parameter with SI units.	4
	b)	Derive general heat conduction of equation in Cartesian coordinates system.	8
		(OR)	
2.	a)	A 5 mm diameter wire is exposed to convective environment with h = 150 W/m^2 K. Calculate the value of k which will just cause an insulation thickness of 0.5 mm to produce critical thickness.	4
	b)	The composite wall consists of three materials, two of which are of known thermal conductivities, namely, 20 W/m K and 50 W/m K, respectively and known thicknesses 30 cm and 15 cm, respectively. The third material is sandwiched between the above two materials is of known thickness 15cm, but unknown thermal conductivity. Measurements revealed that under steady state operation the temperature of the outer surface is 20^oC and that of inner surface is 600^oC. Further, it is noticed that the inside air temperature is 800^oC offering a heat transfer coefficient 25 W/m^2 K. Calculate the unknown value of thermal conductivity of sandwiched material.	8

UNIT-II

3.	a)	Two fins are identical except their diameters. If one of fins diameter is twice that of the other then compare their efficiency and effectiveness.	6
	b)	A rectangular copper fin (k = 300 W/m K) of thickness 5 mm, width 20 mm and length 50 mm is attached to the surface maintained at 250^0C. If the environment is at 30^0C with h = 30 W/m^2 K, calculate the heat transfer by the fin assuming it as (i) infinite long fin, and (ii) end is insulated fin.	6
		(OR)	
4.	a)	What are Heisler charts? How do they help to solve transient conduction problems and discuss?	4
	b)	A long aluminium cylinder 10 cm in diameter and initially at 300^oC is suddenly exposed to a convective environment at 80^oC and h = 500 W/m^2 K. Calculate the temperature at the radius of 1.5 cm, 1 min after the cylinder is exposed to the environment. Take for aluminium k = 200 W/m K, $\alpha = 8.25 \times 10^{-5}$ m^2/s.	8

UNIT-III

5. a) What is forced convection? How does it differ from natural convection? 4
   b) Water at temperature of 20^oC is forced past a flat plate that is maintained at temperature of 60^oC at the characteristic velocity 0.5 m/s. Calculate the boundary layer thickness and also the local convection heat transfer coefficient at a distance 80 cm from the leading edge of the flat plate. Further, calculate the net rate of convection heat transfer coefficient over the above length of flat plate. 8

(OR)

6. a) Define Reynolds, Nusselt and Parandental numbers, explain their importance in convective heat transfer. 4
   b) A 6m long section of an 8cm diameter horizontal hot water pipe passes through a large room whose temperature is 20°C. If the outer surface temperature of the pipe is 70°C, determine the rate of heat loss from the pipe by natural convection. 8

UNIT-IV

7. a) Why do we use the logarithmic mean temperature instead of the arithmetic mean temperature in calculation of heat transfer rate in heat exchanger design? 4
   b) Calculate the overall heat transfer coefficient for a heat exchanger transferring heat from oil to water. Water flows through a copper tube of inside diameter 18 cm and thickness 1.5 cm, while oil flows through the annulus that is formed between this pipe and an outer concentric pipe of the heat exchanger. The thermal conductivity of the wall material 349 W/m K, while fouling factors on the oil side and water side are respectively 0.00086 m^2/K-W and 0.000344 m^2/K-W. The convection heat transfer coefficients on the water and oil sides of the heat exchanger are respectively equal to 4650 W/m^2 K and 1280 W/m^2 K. 8

(OR)

8. a) Classify heat exchangers according to flow directions of hot and cold fluids and explain the characteristics of each. 6
   b) Derive LMTD expression for parallel flow double pipe heat exchanger. 6

UNIT-V

9. a) Define the properties absorptivity, reflectivity and transmissivity. 4
   b) A Horizontal steel pipe having diameter of 10 cm is maintained at a temperature of 70^0C in a large room where the air and wall temperatures are at 30^0C. The surface emissivity of steel is 0.6. Calculate the total heat lost by the pipe per unit length where the heat transfer coefficient is 8 W/m^2 K. 8

(OR)

10. a) What do (i) homogeneous reactions and (ii) heterogeneous reactions represent in mass transfer? 4
    b) A composition of dry standard atmosphere is given on a molar basis to be 78.1 percent 78.1 N_2, 20.9 percent O_2 and 1.0 percent Ar and other constituents as Ar, determine the mass fractions of the constituents of air. 8

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AR18

CODE: 18ECT311 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June-2022

ANTENNAS AND WAVE PROPAGATION

(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)	With necessary diagrams define the following terms: (i) Radiation Mechanism (ii) Radiation Intensity	6M
	b)	Write about the basic antennas and then derive the electric and magnetic field components for an alternating current element?	6M
		(OR)	
2.	a)	With necessary schematics explain the Fields and patterns of thin linear center fed antenna of different lengths	6M
	b)	Define radiation resistance of an antenna with neat schematics. Calculate the radiation resistance of half-wave dipole	6M

UNIT-II

3.	a)	Find the null to null beam width of an EFA when the array length is 10λ and the no. of elements (n) in an isotropic linear array is of 20.	6M
	b)	Derive an expression for the array factor of array of two element isotropic point sources fed with a current of; i. Equal magnitude and random phase ii. Un-equal magnitude and random phase	6M
		(OR)	
4.		With the necessary structure, derive the array factor for an n- element uniform linear array antenna. Also mention required conditions at which this array acts as Broad Side Array(BSA)	12M

UNIT-III

5.	a)	Explain the concepts of V-Antenna and Inverted V-Antenna with necessary diagrams.	6M
	b)	Explain the operation folded dipole antenna and its characteristics	6M
		(OR)	
6.	a)	With necessary diagram, write and explain the construction and operation of helical antenna in normal mode operation	6M
	b)	Explain the concepts of rhombic Antenna and design relations	6M

UNIT-IV

7.	a)	Explain about the corner reflector and square corner reflector antennas	6M
	b)	Discuss the designing and other parameters of a microstrip antenna.	6M
		(OR)	
8.	a)	Explain different types of horn antennas and also derive the design equations for the optimum horn antenna.	6M
	b)	With a neat set up, explain the three antenna method of gain measurement.	6M

UNIT-V

9.	a)	Derive the field strength equation in space wave propagation?	6M
	b)	Draw the atmospheric layers and discuss about each layer in ionospheric Region.	6M
		(OR)	
10.	a)	Explain the following terms: i Critical frequency ii Skip Distance iii Virtual height.	6M
	b)	Derive the field strength at LOS distance in space wave Propagation	6M

AR18

CODE: 18CST309 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June-2022

COMPUTER NETWORKS

(Common to CSE & IT)

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)	Explain the different topologies of the network.	**6M**
	b)	Define Encapsulation and Peer to Peer communication in the layered architecture.	**6M**
		(OR)	
2.	a)	Differentiate OSI reference model with the TCP/IP reference model.	**6M**
	b)	Explain the functions of various layers in ISO-OSI reference model.	**6M**

UNIT-II

3.	a)	Explain about the Hamming code and give one example.	**6M**
	b)	Explain Go-Back- N ARQ protocol using Selective Repeat.	**6M**
		(OR)	
4.	a)	Discuss the assumptions for dynamic channel allocation.	**6M**
	b)	What is the need of Flow control? Explain the common approaches for flow control in data link layer.	**6M**

UNIT-III

5.	a)	How is the Connection - Oriented Services implemented? Explain.	**6M**
	b)	Explain Distance Vector routing algorithm with an example.	**6M**
		(OR)	
6.	a)	What are the general principles of congestion control? Explain.	**6M**
	b)	Draw and explain IPV4 header format	**6M**

UNIT-IV

7.	a)	Explain in detail about Connection management.	**6M**
	b)	Give the format of the UDP segment and TCP segment? Explain when UDP is preferred to TCP.	**6M**
		(OR)	
8.	a)	Compare and Contrast the UDP header and the TCP header.	**6M**
	b)	Explain flow control in transport layer in detail.	**6M**

UNIT-V

9.	a)	Define FTP. Discuss in brief about FTP.	**6M**
	b)	What is the significance of DNS? Explain its concept.	**6M**
		(OR)	
10.	a)	Write short notes on (i) SNMP (ii) HTTP	**6M**
	b)	Explain the WWW in detail.	**6M**

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AR16

CODE: 16CE3013 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June, 2022

DESIGN OF CONCRETE STRUCTURES

(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) Distinguish between: (i) Balanced section, (ii) Under-reinforced section and (iii) Over reinforced section with sketches. Which section is preferable and why? 7 M

   b) With neat sketch of stress-strain diagrams for steel and concrete as per IS456: 2000. write the assumptions made in designing. 7 M

(OR)

2. A rectangular reinforced concrete beam of size 300 mm × 550 mm is simply supported over an effective span of 7 m, is reinforced with 4 bars of 20 mm diameter. Determine maximum super imposed UDL which can be carried by beam apart from its self-weight, and also find area of tension steel to be modified to make section an balanced section. Use M2o grade concrete and Fe415 steel. Assume effective cover for tension steel 50 mm. Density of RCC 25 kN/m^3. 14 M

UNIT-II

3. RCC beam 250mm x 430 mm effective depth is subjected to a factored shear force of 50 kN. Design the shear reinforcement. The beam is provided with tensile steel of 700 mm^2. Use M20 concrete and Fe415 steel. 14 M

(OR)

4. a) A doubly reinforced beam section is 300 mm wide and 500 mm deep to the centre of tensile reinforcement. It is reinforced with compression reinforcement of 300 mm^2 at an effective cover of 50 mm and tension reinforcement of 1800 mm^2. Determine the safe moment of resistance of the section. M20 grade concrete and Fe500 grade steel is used. 7 M

   b) A simply supported T-beam of depth of 450 mm has a flange width of 1000 mm and depth of 120 mm. It is reinforced with 6-20 mm diameter bars on tension side with a clear cover of 30 mm. M20 grade concrete and Fe415 grade steel are used. Calculate moment of resistance of beam. Take b_w= 300 mm. 7 M

UNIT-III

5. Design two-way slab for a room of size 4 m × 5 m. The slab is simply supported over 300 mm thick wall. Live load and floor finish on slab is 4 kN/m^2 and 1 kN/m^2 respectively. Corners are held down. Use M20 grade concrete and Fe415 grade steel. 14 M

(OR)

6. Design a slab for a classroom of dimension 4 m × 6 m (supported on all the four edges) with two adjacent discontinuous. Live load = 3 kN/m^2, Floor finish = 1 kN/m^2; Bearing = 300 mm. Use M20 grade concrete and Fe500 grade steel. Check for deflection need not be done. 14 M

UNIT-IV

7. A RC column of size 300 mm × 400 mm is 5 m long is effectively held and restrained against rotation at both ends subjected to an ultimate load of 1100 kN and ultimate moment of 150 kN-m about major axis. Design column by using SP-16 for 2-side and 4-side reinforcement arrangement. Use M25 grade concrete and Fe415 steel. 14 M

(OR)

8. A RCC column of size 500 mm × 500 mm is subjected to an axial load of 1200 kN. Calculate the necessary reinforcement adopting M20 grade concrete and Fe415 steel. Sketch the reinforcement details. 14 M

UNIT-V

9. Design an isolated footing of uniform thickness of a RC column, bearing a vertical load of 600 kN and having a base of size 500 mm × 500 mm. The safe bearing capacity of the soil may be taken as 120 kN/m^2. Use M20 grade concrete and Fe415 grade steel. Sketch the reinforcement details. 14 M

(OR)

10. Design a rectangular footing of flat type for a column of size 300 mm × 500 mm carrying an axial load of 1200 kN. SBC of soil is 200 kN/m^2. Adopt M20 concrete and Fe500 steel. Sketch the reinforcement details. 14 M

AR16

CODE: 16ME3015 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June-2022

METAL CUTTING AND MACHINE TOOLS

(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

UNIT-I

1.	a)	Explain cutting tool geometry of single point cutting tool with neat diagram?	6M
	b)	What are the circumstances under which a negative rake angle tool is used?	8M
		(OR)	
2.	a)	Compare and contrast orthogonal cutting and oblique cutting with a neat sketch	8M
	b)	If the tool life has to be doubled what should be the ratio of cutting speeds if n=0.33.	6M

UNIT-II

3.	a)	Explain with neat sketches about various Lathe operations.	8M
	b)	How much machining time will be required to reduce the diameter of a cast iron rod from 116 mm to 120mm over a length of 100 mm by turning using a carbide insert. Choose cutting speed V =100 m/min depth of cut d=1mm and feed f = 0.2 mm/rev	6M
		(OR)	
4.	a)	Suggest and explain a taper tuning method for very steep and accurate taper turning on a long work piece with free hand sketch diagram.	7M
	b)	Explain briefly about different types of lathe attachments.	7M

UNIT-III

5.	a)	How to adjust stroke length and position of stroke in a shaper machine? Describe with neat sketches.	7M
	b)	Sketch and explain the slotting machine working principle and its parts.	7M
		(OR)	
6.	a)	Describe twist drill nomenclature using sketches Given that hole diameter 20 mm; depth to be drilled 70 mm; feed 1.2 mm/rev; cutting speed 60 m/min, find out drill rpm, and cutting time and metal removal rate assuming tool approach and over run travel as 5 mm.	7M
	b)	Briefly explain the following operations with help of neat sketches: (i) reaming (ii) taping (iii) Counter boring.	7M

UNIT-IV

7.	a)	Explain centerless grinding process with a neat sketch.	6M
	b)	How do you select a grinding wheel? Explain grinding wheel specifications briefly.	8M
		(OR)	
8.		Explain briefly following processes with neat sketch: (i) Honing (ii) Lapping (iii) Super finishing (iv) Polishing (v) Buffing (vi) Gear hobbing (vii) Abrasive jet machining	14M

UNIT-V

9.	a)	Explain the different types of fits used in engineering practice with neat sketches	6M
	b)	a) Differentiate the following i) Hole basis system and shaft basis system ii) Selective assembly and interchangeable assembly	8M

(OR)

10.	a)	State and explain the "Taylor's principle of gauge design'. Explain the following in connection with gauge design: (i) Gauge maker's tolerance (ii) Wear allowance	7M
	b)	Design a GO and NOGO inspection gauges to check a hole and shaft of assembly 22H7/f8. Allow unilateral gauge tolerance of 10% with a wear allowance equal to one fifth of the gauge tolerance. Given that $i = 0.45 (D)^{1/3}+0.001D$, fundamental deviation of 'f" = $-5.5 D^{0.41}$, 22 mm falls in the diameter step of 18 mm and 25 mm, IT7=16i, IT8=25i.	7M

AR16

CODE: 16HS3005 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June-2022

MANAGERIAL ECONOMICS AND MANAGEMENT SCIENCE

(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)	Explain the nature and scope of managerial economics.	7M
	b)	Describe the different types of elasticity of demand.	7M
		(OR)	
2.	a)	Write and explain the different types of price elasticity of demand with examples.	7M
	b)	Discuss the expert opinion and test marketing methods of demand forecasting.	7M

UNIT-II

3.	a)	Explain the least cost combination of inputs with an example.	7M
	b)	Describe the internal and external economies of scale.	7M
		(OR)	
4.	a)	Explain the following: 1. Explicit & Implicit costs 2.Out of pocket & Imputed costs	7M
	b)	Consider the following data of a company: Sales = Rs. 40,000; Fixed cost = Rs. 7500; Variable cost = Rs. 17,500; Find the following: (i) Contribution (ii) Profit (iii) Break Even Point (iv) Margin of safety	7M

UNIT-III

5.	a)	What is market structure? Explain the features of monopoly.	7M
	b)	Describe the concept of monopolistic competition in detail.	7M
		(OR)	
6.	a)	Explain about price-output determination in case of monopoly.	7M
	b)	Explain the following: i) Cost-plus pricing ii) Value pricing iii) Penetration pricing iv) Price skimming	7M

UNIT-IV

7.	a)	What is directing of management function? Explain it in detail.	7M
	b)	Describe the Taylor's scientific management theory.	7M
		(OR)	
8.	a)	Discuss the Herzberg's two-factor theory of motivation with an example.	7M
	b)	What is leadership? Explain different styles of leadership.	7M

UNIT-V

9.	a)	What are the elements of marketing mix? Explain them briefly.	7M
	b)	Describe the different channels of distribution.	7M
		(OR)	
10.	a)	Write and explain the functions of HR Manager.	7M
	b)	What is performance appraisal? Explain the methods of performance appraisal.	7M

AR16

CODE: 16CS3012 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, June-2022

COMPUTER NETWORKS

(Common to CSE & 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)	Define Topology. Discuss in brief about computer network topologies.	7M
	b)	Explain the TCP / IP protocol suite.	7M
		(OR)	
2.	a)	Explain the components of Data Communication.	7M
	b)	Differentiate between OSI and TCP /IP reference models	7M

UNIT-II

3.	a)	Explain in detail about the design issues of data link layer.	7M
	b)	Explain a protocol using GO BACK N and Selective Repeat.	7M
		(OR)	
4.	a)	What is Carrier Sense Multiple Access? What are the different approaches?	7M
	b)	Discuss about various collision free protocols	7M

UNIT-III

5.	a)	With an example explain the shortest path routing algorithms used in computer networks.	7M
	b)	What are the general principles of congestion control? Explain.	7M
		(OR)	
6.	a)	Describe the design issues of Network Layer.	7M
	b)	What are the differences between Static Routing Algorithm and Dynamic Routing Algorithm?	7M

UNIT-IV

7.	a)	Discuss in detail about the connection establishment and release in TCP.	7M
	b)	Explain about the Remote Procedural call in UDP.	7M
		(OR)	
8.	a)	Discuss about the services offered by TCP.	7M
	b)	Explain the structure of UDP Header format.	7M

UNIT-V

9.	a)	Write short notes on the following i) DNS ii) SNMP	14M
		(OR)	
	b)	Write short notes on following a) HTTP b) E-mail c) Web documents	14M