AR16

CODE: 16CE3020 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Regular & Supplementary Examinations, October / November-2020

Advanced 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. Write steps to design the counterfort retaining wall. 14M

(OR)

2. Design a cantilever type retaining wall to retain horizontal earth fill of 5m high above the ground level. SBC of soil is 160kN/m2. Unit weight of soil is 16kN/m3 and angle of repose is 30^0. The coefficient of friction between concrete base slab and soil is 0.45. 14M

UNIT-II

3. Design a Circular tank with flexible base for a capacity of 180 kilo litres resting on ground having a soil with SBC of 120kN\m^2. Provide a depth of 3.5m with a free board of 250mm. The construction materials to be used are M30 grade concrete and Fe415 steel. 14M

(OR)

4. An open square tank 4m x4m x 3m deep rests on firm ground. Design the tank. Use M 30 concrete and Fe 415 steel. 14M

UNIT-III

5. Design a typical flat slab which is supported on 450mm diameter circular columns spaced 6mx5m apart in both the directions. The live load on the flat slab is 4kN\m^2. Use Fe 415 steel and M20 concrete 14M

(OR)

6. Design a roof slab for a circular room 4.5m inside diameter. The thickness of wall is 230mm and the slab projects outside the walls by 1m all around. The live load on the slab is 3kN\m^2 at service Use M20 concrete and Fe 415 steel. 14M

UNIT-IV

7. Design a pile cap for supporting a column of section 400mmx400mm carrying an axial load of 1000kN at service state. The pile cap contains a group of four friction piles each of 250mmdiameter for transfer of load from column to soil. Use M30 concrete and Fe 415 steel. 14M

(OR)

8. Explain design steps of pile foundation with neat sketch. 14M

UNIT-V

9. Calculate base shear and distribute on a five storied symmetrical commercial building using response spectrum method. Plan dimensions of the building are 15m x 15m. Beams are spaced at 5m centre to centre both in x and y directions. Assume zone III, important building and founded on medium soil conditions. Thickness of slab is 125mm, beams are of 230mm x 500mm, columns are of 400mm x 400mm. Assume uniform brick wall of thickness 230mm on every beam. 14M

(OR)

10. Explain provisions for ductile detailing of structures (beam and column) as per IS13920. 14M

AR16

CODE: 16CE3021 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Regular & Supplementary Examinations, October / November-2020

INDUSTRIAL WASTE AND WASTE WATER MANAGEMENT

(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)	Write a note on characteristics of industrial wastewater	7
	b)	Explain the common types of waste water treatment methods	7
		(OR)	
2.	a)	Explain the effects on sewer and sewage treatment plant due to pollution characteristic of waste.	7
	b)	Explain the physical treatment process of industrial wastewater	7

UNIT-II

3.	a)	What are the advantage and disadvantage of Joint treatment of industrial wastes & domestic sewage	7
	b)	Explain the dilution and what are the conditions to adopt the dilution method for sewage canfavorable?	7
		(OR)	
4.	a)	Give the problems arise when we dispose the industrial waste water into streams	7
	b)	Discuss the utilization of municipal waste water in industries? And its advantages	7

UNIT-III

5.	a)	Explain the treatment of waste water of Dairy plants with neat flow chart	7
	b)	Briefly explain the Manufacturing Process and sources of waste from paper mill industry	7
		(OR)	
6.	a)	Briefly explain the Manufacturing Process and sources of waste from tanneries industry	7
	b)	Explain the treatment of waste water of cotton textile mill industry with neat flow chart	7

UNIT-IV

7.	a)	Discuss the treatment of waste water of pharmaceutical industry with neat flow chart	7
	b)	Briefly explain the Manufacturing Process and sources of waste from steel plants	7
		(OR)	
8.	a)	Discuss the treatment of waste water of Sugar mills with neat flow chart	7
	b)	Briefly explain the Manufacturing Process and sources of waste from fertilizer plants	7

UNIT-V

9.		Brief explain the zero discharge and give the limitations of common effluent Treatment plant	14
		(OR)	
10.		Design of anaerobic –aerobic system for treatment of corn-starch waste, the details of which are furnished below: Flow: 80 cubic meters per day in phase I : 150 cubic meters per day in phase II Appearance: Dirty white Odour: Alcoholic PH : 5.2 Total solids: 7764mg/lit Dissolved solids: 1440mg/lit Suspended solids: 6324 mg/lit COD: 3677 mg/lit BOD 5days 20°C	14

AR16

CODE: 16EE3020 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Regular & Supplementary Examinations, October / November-2020

ELECTRICAL DISTRIBUTION SYSTEMS

(Elective-I)

(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) Derive the relationship between the load and loss factors. 7M
   b) Explain the classification of loads and their characteristics in distribution systems. 7M

(OR)

2. a) Discuss about Diversity factor and coincidence factor 6M
   b) How is the design of distribution system done? Discuss the factors that contribute for design. 8M

UNIT-II

3. a) Explain the selection of site for substation and also explain the benefits derived through optimal location of substations. 7M
   b) Explain how to calculate the rating of a square type distribution substation having four feeders. 7M

(OR)

4. a) Draw the substation layout by showing the location of all substation equipments 7M
   b) Mention the factors that are to be considered in selecting ideal substations. 7M

UNIT-III

5. a) Derive the expression for total copper loss per phase for a radial feeder with a uniformly distributed load. 7M
   b) Derive an expression for voltage drop in a three phase A.C distribution. 7M

(OR)

6. a) Derive the condition for load power factor at which voltage drop is maximum. 7M
   b) Write the factors responsible for causing a voltage drop in distribution systems. 7M

UNIT-IV

7. a) List the protective devices used for different types of secondary distribution systems. Explain any two of them. 8M
   b) What are the objectives of distribution system protection? 6M

(OR)

8. a) What is meant by coordination of protective devices? Explain with a neat sketch recloser to fuse coordination. 8M
   b) What are different varieties of fuses used for protection? Give the features of HRC fuse. 6M

UNIT-V

9. a) Explain about shunt and series capacitive compensation with phasor diagrams. 8M
   b) Explain different methods used for power factor correction in distribution systems. 6M

(OR)

10. a) Explain line drop compensation in distribution systems. 7M
    b) A 3- phase 500hp, 50Hz, 4.16kV star connected induction motor has a full load efficiency of 88% with a power factor of 0.75 lag. If it is desired to increase the power factor to 0.9lag by connecting capacitors at the load, Determine 7M

    i) The rating of capacitor bank in kVAR

    ii) Capacitance of each unit if the capacitors are connected in delta and star

AR16

CODE: 16ME3022 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Regular & Supplementary Examinations, October / November-2020

REFRIGERATION AND AIR CONDITIONING

(Elective - I)

(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) A cold storage plant is required to store 20 tonnes of fish. The fish is supplied at a temperature of 30^0C. The specific heat of fish above and below the freezing point is 2.93 kJ/kg-K and 1.26 kJ/kg-K respectively. The fish is stored in cold storage at -8^0C. The freezing point of fish is -4^0C. The latent heat of fish is 235 kJ/kg. If the plant requires 75 kW to drive it, find: (i) the capacity of plant and (ii) time taken to achieve the cooling. Assume actual C.O.P is 30% of the Carnot C.O.P — 6M

   b) Explain the working of regenerative air cycle cooling system used in air crafts. — 8M

(OR)

2. a) Define tonne of refrigeration. List various applications of refrigeration. — 6M

   b) A Bell-Coleman refrigeration cycle works between 1 bar and 6 bar. The adiabatic efficiency of compression is 90% and expansion is 95%. Find the COP of the system and its tonnage when the air flow rate is 2 kg/sec. The ambient temperature is 25ºC and air temperature after cooling in heat exchanger is 65ºC. — 8M

UNIT-II

3. a) What are the required properties of a refrigerant? Classify refrigerants. — 6M

   b) The temperature limits of a vapour compression refrigeration system are 25^0C and -10^0C. If the gas is dry at the end of compression, calculate the coefficient of performance of the cycle assuming no undercooling of the liquid ammonia. Represent the cycle on p-h chart. Use the following properties of ammonia: — 8M

Temperature, ^{0}C	Liquid enthalpy, kJ/kg	Latent heat, kJ/kg	Liquid entropy, kJ/kg-K
25	298.9	1166.94	1.1242
-10	135.37	1297.68	0.5443

(OR)

4. a) Discuss the effects of (i) sub-cooling of refrigerant (ii) superheating of refrigerant and (iii) evaporator pressure on the performance of vapour compression refrigeration system. — 6M

   b) A vapour compression refrigerator using R-40 as refrigerant operates between temperature limits of -10^0C and 45^0C. At entry to the compressor, the refrigerant is dry and saturated and after compression it acquires a temperature of 60^0C. Find the C.O.P of the refrigerator. Sketch the cycle on p-h chart. — 8M

Saturation temperature, ^{0}C	Enthalpy, kJ/kg		Entropy, kJ/kg-K	
	Liquid	Vapour	Liquid	Vapour
-10	45.4	460.7	0.183	1.637
45	133.0	483.6	0.485	1.587

UNIT-III

5. a) Describe the working of Li-Br absorption refrigeration system with neat sketch. 10M
   b) What are the desirable properties of ideal refrigerant – absorbent combination? 4M

(OR)

6. a) Describe the working of a simple vapour absorption refrigeration system with a neat sketch. 8M
   b) Comparison of vapour compression and vapour absorption refrigeration systems. 6M

UNIT-IV

7. a) Describe the working of Thermo-Electric refrigeration system with neat sketch 10M
   b) What are the advantages, disadvantages and applications of Thermo-Electric refrigeration system 4M

(OR)

8. a) Explain the concept of cooling with dehumidification and sketch the process on psychrometric chart. Also deduce the expression for sensible heat factor. 8M
   b) What are the factors affecting human comfort? Explain the comfort chart. 6M

UNIT-V

9. a) Explain the following terms: (a) Dry Bulb Temperature (DBT) (ii) Specific humidity (iii) relative humidity and (iv) Dew point temperature (DPT). 8M
   b) 40 m^3 of air at 35^0C DBT and 50% RH is cooled to 25^0C DBT maintaining its specific humidity constant. Determine: 6M
      (i) Relative humidity of cooled air
      (ii) specific humidity of air and (iii) heat removed from air.

(OR)

10. a) Explain winter air-conditioning with a neat sketch. 6M
    b) It is required to design an air-conditioning plant for a small office room for the winter conditions. 8M
       i. Outdoor conditions: 12^0C DBT, 10^0C WBT
       ii. Required conditions: 20^0C DBT, 60% R.H
       iii. Amount of air circulation: 0.3 m^3/min per person
       iv. Seating capacity of office: 60

       The required condition is first achieved by heating and then by adiabatic humidification. Determine the following:
       (i) Heating capacity of the coil in kW and the surface temperature required if the by-pass factor of the coil is 0.4.
       (ii) The capacity of humidifier. Solve the problem by using psychrometric chart.

AR16

CODE: 16ME3025 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Regular & Supplementary Examinations, October / November-2020

ROBOTICS

(Elective - I)

(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) Sketch and explain the four basic robot configurations classified according to the coordinate system. 9M
   b) Explain the importance of Robotics in Automation. 5M

(OR)

2. a) What are the basic components of Industrial Robot? Explain them briefly with sketch. 9M
   b) Explain the requirements and challenges of end effectors. 5M

UNIT-II

3. a) Explain the working of a stepper motor 7M
   b) Briefly explain the working principle of following sensors: 7M
      (i) Encoders ii) Resolvers

(OR)

4. a) Explain the working of a pneumatic actuating system with a neat sketch. 7M
   b) Explain about force and torque sensors. 7M

UNIT-III

5. a) What is homogenous transformation matrix? Explain translation and rotation transformations. 6M
   b) Determine the transformation matrix T that represents a rotation of 60^o about X-axis, followed by a rotation of 30^o about Y-axis and followed by rotation of 90^0 about Z-axis. 8M

(OR)

6. What is a forward kinematics problem? Explain Denavit-Hartenberg convention for selecting frames of reference in two joint robotic applications. Derive necessary equation. 14M

UNIT-IV

7. a) Write a short note on types of trajectory. 7M
   b) Explain the different types of Robot Programming Languages. 7M

(OR)

8. a) Explain the different steps in trajectory planning. 8M
   b) Discuss various capabilities and limitations of the robot languages. 6M

UNIT-V

9. a) What are the considerations and requirements of robot cell design? Explain. 7M
   b) Explain the applications of robots in continuous arc welding & spray painting. 7M

(OR)

10. a) Explain in detail about In-line robot work cell. 7M
    b) What are the applications of robots in non-manufacturing applications? Explain briefly. 7M

AR16

CODE: 16EC3023 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Regular and Supplementary Examinations, October/November, 2020

OPTICAL COMMUNICATION & NETWORKS

(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)	Draw the schematic diagram of optical fiber communication system and explain the function of each component.	7M
	b)	A multimode step-index fiber has a relative refractive index difference of 1% and a core refractive index of 1.5. The number of modes operating at a wavelength of 1.3μm is 1100. Estimate the diameter of the fiber core.	7M

(OR)

2.	a)	Explain fiber materials	7M
	b)	Discuss bending , core and cladding losses that occur in an optical fiber	7M

UNIT-II

3.	a)	Explain internal quantum efficiency and power modulation of LED	7M
	b)	If the quantum efficiency at 1.3μm wavelength of light is 0.65 and the number of photons incident at this wavelength is $5x10^5$, what is the number of electron-hole pairs generated?	7M

(OR)

4.	a)	Explain the working principle of surface emitting LED.	7M
	b)	Differentiate between the photo diode parameters, 'Quantum limit' and 'Dark current'.	7M

UNIT-III

5.	a)	Explain the pulse broadening due to inter model dispersion in different types of optical fibers	7M
	b)	Explain Polarization mode dispersion	7M

(OR)

6.	a)	Discuss Information capacity determination of an optical fiber and explain the significance of bandwidth-distance product.	7M
	b)	A multimode graded index fiber exhibits total pulse broadening of 0.1μs over a distance of 15Km. Estimate its maximum possible bandwidth and pulse dispersion per unit length.	7M

UNIT-IV

7.	a)	What are the requirements of the fiber optic receiver? Explain the fundamental fiber optic link receiver operation.	7M
	b)	Briefly explain the link power budget.	7M

(OR)

8.	a)	Explain Probability of error in an optical receiver	7M
	b)	Briefly explain the Rise-time budget.	7M

UNIT-V

9.	a)	What is splicing? Discuss any two splicing techniques.	7M
	b)	Explain optical CDMA	7M

(OR)

10.	a)	Discuss different types of fiber optic amplifiers.	7M
	b)	Explain WDM networks	7M

AR16

CODE: 16EC3024 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Regular & Supplementary Examinations, October / November-2020

TELECOMMUNICATION SWITCHING SYSTEMS

(Elective –I)

(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.		Explain Different Switching Network Configurations.	14M
		(OR)	
2.	a)	Explain the elements of switching systems with neat block diagram.	7M
	b)	Explain principle of cross bar switching with diagram.	7M

UNIT-II

3.	a)	Derive the expression for blocking probability and number of switching elements for 2- stage network.	7M
	b)	Explain different modes used in dual processor architecture configurations in centralized stored program control (SPC).	7M
		(OR)	
4.	a)	Explain time division space switch with neat diagram.	7M
	b)	Briefly explain distributed SPC?	7M

UNIT-III

5.	a)	Give brief explanation on numbering plan.	8M
	b)	Distinguish between in-band and out-band signalling.	6M
		(OR)	
6.	a)	Explain In-Channel signalling.	8M
	b)	Discuss subscriber loop system in detail.	6M

UNIT-IV

7.		Name and explain the functions of each of the layers of the seven layer OSI model?	14M
		(OR)	
8.	a)	Explain the basic concepts of connection oriented and connectionless protocols.	6M
	b)	Describe serial and parallel data transmission and explain the advantages and disadvantages of both types of transmissions?	8M

UNIT-V

9.	a)	Explain the functional architecture of ISDN.	8M
	b)	Outline the salient features of value added networks.	6M
		(OR)	
10.	a)	Compare packet switching and virtual circuit switching.	6M
	b)	What are the categories of services provided by ISDN? Explain.	8M

AR16

CODE: 16CS3020 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Regular and Supplementary Examinations, October/November, 2020

Data Warehousing and Data Mining

(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) Describe the steps in Data pre processing in detail. 9M
   b) Explain the measures of dissimilarity. 5 M

(OR)

2. a) Define KDD. Discuss the motivating challenges of Data Mining. 7 M
   b) Explain different types of attributes with examples. 7 M

UNIT-II

3. a) Describe multi dimensional model in data warehouse. 7 M
   b) Compare and contrast OLTP and OLAP Systems 7 M

(OR)

4. a) Explain the Data warehouse architecture with neat sketch. 9 M
   b) Explain the attribute oriented induction for class comparisons. 5 M

UNIT-III

5. a) Find the frequent item sets for the following data using Apriori algorithm with minimum support count = 2 and minimum confidence =60% 9 M

TID	Items
T100	I1,I2,I5
T200	I2,I4
T300	I2,I3
T400	I1,I2,I4
T500	I1,I3
T600	I2,I3
T700	I1,I3
T800	I1,I2,I3,I5
T900	I1,I2,I3

   b) Explain about generating Association Rules from Frequent Item sets. 5 M

(OR)

6. a) Find all frequent item sets for the following data using FP-growth algorithm with minimum support=60% and minimum confidence =80% 10M

TID	Items bought
T100	{M,O,N,K,E,Y }
T200	{D,O,N,K,E,Y}
T300	{M,A,K,E}
T400	{M,U,C,K,Y}
T500	{C,O,O,K,I,E}

b) Write short note on Closed Item sets 4 M

UNIT-IV

7. a) Explain the Bayes classification with an example. 7 M
b) Describe the metrics for evaluating classifier. 7 M

(OR)

8. a) Explain the basic algorithm for inducing a decision tree from training tuples. 7 M
b) Describe the Rule based classification with an example. 7 M

UNIT-V

9. a) Describe the Bisecting K-means algorithm with an example 9 M
b) Discuss the Strengths and weaknesses of DBSCAN algorithm 5 M

(OR)

10. a) Describe the Basic Agglomerative Hierarchical Clustering Algorithm with an example. 9 M
b) Write short note on different types of clusters 5 M

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AR13

CODE: 13CE3021

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, October/November, 2020
INDUSTRIAL WASTE AND WASTER WATER MANAGEMENT
(ELECTIVE-I)
(Civil Engineering)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1 a) Define "Hazardous waste".
b) What do you mean by strength reduction in waste water?
c) What are the problems (any two) due to discharge of Industrial waste water into lakes?
d) What is main heavy metal generated from the waste of tannery industry?
e) Name Biological aerobic treatments (any three) in Common Effluent Treatment Plants.
f) List the treatments (any three) that can be used in recirculation of industrial wastes.
g) What is "fractional distillation"?
h) Hardness of process water should be more in distillery industry. Why?
i) Dairy wastes can be treated efficiently by biological processes. Justify.
j) Differentiate between common effluent treatment plant and combined effluent treatment plant.

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. What are the different types of chemical characteristics in industrial waste? Explain any five of these characteristics.

(OR)

3. What are Biomedical wastes? Classify them and find the sources from which these waste are generated? What are the problems related to Biomedical waste and the need for Biomedical management?

UNIT-II

4. What is Volume reduction in industrial waste management? Explain how the volume reduction can be achieved.

(OR)

5. a) What is Neutralization explain it with help of examples
   b) What is equalization and proportioning and the main aim of these units in waste water treatment

UNIT-III

6. List the problems due to discharge of industrial waste water into River or streams bodies. Explain with help of Oxygen sag curve along with a neat sketch of it.

(OR)

7. a) What do you mean by Re-use of Municipal Waste Water?
   b) List the problems due to disposing of industrial waste water onto oceans. What would be efficient method for disposing waste into oceans.

UNIT-IV

8. Explain the Manufacturing process of processed sugar in sugar mills. List the special characteristics waste of Sugar mill produced during this process?

(OR)

9. What are the typical characteristics of wastes generated by Fertilizer industry? What is the treatment methods adapted to these wastes generated?

UNIT-V

10. What is CETP? List the advantages and limitations of common Effluent Treatment Plants (CETP).

(OR)

11. Explain the Preliminary methods used in the design of CETP along with sketches.

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AR13

CODE: 13EE3020 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, October/November, 2020

H.V.D.C. TRANSMISSION

(ELECTRICAL AND ELECTRONICS ENGINEERING)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) What is the advantage of negative polarity in HVDC transmission systems?
   b) What is meant by peak inverse voltage?
   c) What are uncharacteristic harmonics?
   d) What is the use of surge arrester in HVDC?
   e) What is meant by commutation?
   f) What is the effect of corona on HVDC system?
   g) Draw single tuned filter circuit and its impedance characteristic
   h) List out the applications of HVDC transmission
   i) What is the purpose of bypass valve.
   j) What are the different assumptions made for converter operation?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Explain about the modern trends in HVDC transmission 6
   b) What are the types of DC links and explain each with proper diagrams 6

(OR)

3. a) What are the assumptions made while studying the properties of converter circuits. 6
   b) Explain about complete characteristics of 12 pulse converter . 6

UNIT-II

4. Explain about the converter control characteristics for both positive and negative current margin. 12

(OR)

5. Explain about starting and stopping of DC link 12

UNIT-III

6. a) Write a short notes about (i) shunt capacitors (ii) synchronous condensers 6
   b) Explain DC load flow problem 6

(OR)

7. a) Explain about the reactive power control during transients 4
   b) Write short notes on modelling of DC links. 8

UNIT-IV

8. a) What are the causes of over voltages in a converter station? 6
   b) Explain about the following 6
   (i)Arc through (ii) Misfire (iii) Arc back

(OR)

9. a) Explain the HVDC system protection scheme against over currents 6
   b) Write a short note about 6
   (i) Surge arresters (ii) smoothing reactors

UNIT-V

10. a) What are the troubles caused by harmonics? Explain. 6
    b) Mention the configuration and impedance characteristics of various types of filters. 6

(OR)

11. Give a short notes about generation of harmonics, characteristic harmonics and non characteristic harmonics 12

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AR13

SUB CODE:13EC3026 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, October/November, 2020
OOPS THROUGH JAVA
(Electronics & Communication Engineering)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) What is the purpose of byte code?
   b) Differentiate process and a thread
   c) What is the purpose of this keyword
   d) What is the difference between Applet and JApplet.
   e) Differentiate throw and throws.
   f) Define dead lock in threads.
   g) Differentiate method overloading and overriding.
   h) What is checked Exception?
   i) What is the purpose of finally keyword
   j) Define event listener.

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Explain OOP concepts with suitable examples. 6 M
   b) Explain scope and life time of variable with an example 6 M

(OR)

3. a) Explain control statements in java. Write a program to display n Fibonacci numbers using recursion. 6 M
   b) What are various operators in java? Explain them with a suitable program 6 M

UNIT-II

4. a) How do you create arrays of objects. Write a java program to demonstrate arrays of objects. 6 M
   b) What is the purpose of the keyword static? Explain with an Example program 6 M

(OR)

5. a) Define a constructor. Explain constructor overloading with an example program 6 M
   b) Write a program to demonstrate passing objects as arguments and returning objects. 6 M

UNIT-III

6. a) What is the purpose of the keyword super. Explain with Examples. 6 M
   b) What is an abstract class? Explain its importance with an Example. 6 M

(OR)

7. a) What is Dynamic Method Dispatch? Explain how it is achieved in java. 6 M
   b) Define an interface. Explain its importance using suitable examples 6 M

UNIT-IV

8. a) Write a program to demonstrate the creation of user defined exceptions 6 M
   b) Define Thread. Explain thread life cycle with a neat sketch 6 M

(OR)

9. a) Explain about checked and unchecked exceptions. Write a program to demonstrate the usage of the keyword throws 6 M
   b) What is Multithreading? Write a program to demonstrate the usage of the functions join() and is Alive(). 6 M

UNIT-V

10. a) What is Delegation Event Model? Write a program to demonstrate a simple login validation program 6 M
    b) Explain about layout managers with suitable examples 6 M

(OR)

11. a) What is the difference between awt and swing . Explain any 3 Swing components with examples 6 M
    b) Differentiate an Applet and stand alone applications. Explain applet life cycle with an example program 6 M

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AR13

CODE: 13CS3015 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, October/November, 2020
DATA WAREHOUSING AND DATA MINING
(COMPUTER SCIENCE & ENGINEERING)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) List out the types of clustering methods.
   b) Explain the concepts and capabilities of data mining.
   c) What is discrete and continuous data in data mining world?
   d) Why is association rule necessary?
   e) List different data mining tools.
   f) If there are 3 dimensions, how many cuboids are there in cube?
   g) What are the characteristics of data warehouse?
   h) Define KDD.
   i) What are outliers?
   j) What is data characterization?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Explain various types of data attributes. 6M
   b) Describe three challenges to data mining regarding data mining methodology and user interaction issues. 6M

(OR)

3. a) What are the major challenges of mining a huge amount of data (such as billions of tuples) in comparison with mining a small amount of data (such as a few hundred tuple data set)? 6M
   b) Discuss in brief various data pre-processing techniques. 6M

UNIT-II

4. a) Describe MOLAP Vs ROLAP. 6M
   b) Explain briefly data warehouse architecture with a neat sketch. 6M

(OR)

5. Discuss briefly types of OLAP Servers and explain the OLAP operations.

UNIT-III

6. a) Discuss frequent itemset generation in FP-Growth algorithm. 8M
   b) Distinguish between Apriori algorithm and FP-Growth algorithm. 4M

(OR)

7. a) Explain the characteristics of association analysis. 6M
   b) Explain the pseudo code for frequent item set generation using Apriori algorithm. 6M

UNIT-IV

8. a) Explain pseudo code for decision tree. 6M
   b) Explain over fitting and tree pruning. 6M

(OR)

9. a) What are the advantages of using Bayes theorem for classification. 6M
   b) Describe briefly issues regarding classification and prediction. 6M

UNIT-V

10. a) What are the strength and weaknesses of K-means clustering? 6M
    b) Differentiate between bisecting K-means and K-means. 6M

(OR)

11. a) What are strength and weaknesses of DBSCAN? Explain. 6M
    b) Explain hierarchical clustering. 6M

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