LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)

L.B. Reddy Nagar :: Mylavaram-521 230 :: Krishna Dist. :: A.P
Approved by AICTE, New Delhi. Affiliated to JNTUK, Kakinada

M.Tech.(II Semester) (R17) Supplementary Examinations, August 2021

TIME TABLE

TIME :10.00 AM to 01.00 PM A.Y. 2020-21

Date	Computer Science and Engineering	Power Electronics and Drives	Thermal Engineering	VLSI and Embedded Systems
12-08-2021 (Thursday)	17CO10 - Big Data Analytics	17PE10 - Modern Control Theory	17TE10 - Computational Fluid Dynamics	17VE10 - Analog VLSI Design
13-08-2021 (Friday)	17CO11 - Internet of Things	17PE11 - Switched Mode Power Conversion	17TE11 - Renewable Energy Technology	17VE11 - Real Time Operating Systems
14-08-2021 (Saturday)	17CO12 - Cryptography and Network Security	17PE12 - Control of Motor Drives-II	17TE12 - Design of Thermal Systems	17VE12 - DSP Processors and Architecture
16-08-2021 (Monday)	17CO13 - Advanced Data Mining	17PE13 - Power Quality Engineering *17PE14 - Hybrid Electrical Vehicles*	17TE15 - Gas Turbine Theory	17VE14 - Embedded Software Design *17VE15 - VLSI Testing and Verification*
17-08-2021 (Tuesday)	17CO16 - Neural Networks	17PE17 - Applications of Artificial Intelligence Techniques	17TE16 - Refrigeration and Cryogenics	17VE18 - Wireless Communications & Networks *17VE16 - VLSI Architecture for Signal Processing*
18-08-2021 (Wednesday)	Add-on-Course-2 17CO91 - Information Retrieval Systems	Add-on-Course-2 17PE91 - Integration of Renewable Sources	Add-on-Course-2 17TE91 - Fuels, Combustion and Environment	Add-on-Course-2 17VE91 - ASIC Design

Note: Any omissions or clashes in the time table may please be informed to the Controller of Examinations immediately.

Date: 29-07-2021

CONTROLLER OF EXAMINATIONS

PRINCIPAL

Copy to: 1. Vice-Principal, Deans & HoDs 2. Transport in-charge & Librarian
3. Canteen, Security & Hostels 4. All Notice Boards

H.T.No										

16 AUG 2021

R17

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M.Tech. (II Semester) ~~Regular~~/Supplementary Examinations

17CO13-ADVANCED DATA MINING

(CSE)

Time : 3 hours Max. Marks : 60

Answer one question from each unit.
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1.	Illustrate Multi-Level association mining with suitable examples.	12M	CO1	L3
	(OR)			
2(a)	Discuss about Multi-Dimensional Association rules in detail.	6M	CO1	L2
(b)	List out the Data Mining tasks.	6M	CO1	L1
3.	Explain the classification with back propagation in data mining.	12M	CO2	L2
	(OR)			
4.	Discuss about support vector machines in data mining.	12M	CO2	L2
5(a)	Compare the following clustering methods with example. (i) STING (ii) CLIQUE.	6M	CO3	L4
(b)	Describe DBSCAN clustering algorithm.	6M	CO3	L2
	(OR)			
6.	List and explain any four advanced clustering methods in detail.	12M	CO3	L1
7.	Identify the mining techniques and components in Web pages.	12M	CO4	L1
	(OR)			
8(a)	How the web pages are categorized when user enters a query in search engine?	6M	CO4	L2
(b)	What are the text clustering methods used in text mining?	6M	CO4	L2
9.	Illustrate the Event Prediction Problem with example.	12M	CO5	L3
	(OR)			
10.	Summarize the various methods for Time Series Data mining.	12M	CO5	L2

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M.Tech. (II Semester) ~~Regular~~/Supplementary Examinations

17CO91-INFORMATION RETRIEVAL SYSTEMS

(CSE)

Time : 3 hours Max. Marks : 60

Answer one question from each unit.
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Analyze query processing technique using incidence matrix for a given query.	6M	CO1	L4
(b)	Summarize the inverted index approach for creating an index to a given set of documents.	6M	CO1	L2
	(OR)			
2(a)	Classify the data structures for looking up a term in a document collection.	6M	CO1	L2
(b)	What are Skip pointers? How Intersection with skip pointers will be done?	6M	CO1	L1
3(a)	How scores will be computed in a given search system? Justify.	6M	CO2	L1
(b)	Demonstrate Vector Space model for Information Retrieval.	6M	CO2	L2
	(OR)			
4(a)	Relate Term frequency weight, Document frequency weight and tf-idf weight. Show the cosine similarity between query and document.	6M	CO2	L2
(b)	Explain the importance of ranking in Information Retrieval Systems.	6M	CO2	L2
5(a)	Show the Probabilistic approach for Information Retrieval.	6M	CO3	L2
(b)	Demonstrate the basic probability theory with chain and partition rules.	6M	CO3	L2
	(OR)			
6.	Analyze the Naive Bayes classifier for document classification.	12M	CO3	L4
7(a)	What is Weighted Zone Scoring? Discuss with an example.	6M	CO4	L1
(b)	Illustrate machine learned scoring with an example.	6M	CO4	L2
	(OR)			
8(a)	Compare and contrast classification and clustering.	6M	CO4	L2
(b)	Discuss the cluster similarity using single-link, complete-link, centroid and group-average methods.	6M	CO4	L3
9(a)	How are advertisements ranked? Explain the process.	6M	CO5	L1
(b)	Draw the basic crawl architecture and discuss.	6M	CO5	L3
	(OR)			
10.	Illustrate Hyperlink-Induced Topic Search (HITS) with examples.	12M	CO5	L2

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M.Tech. (II Semester) ~~Regular~~/Supplementary Examinations

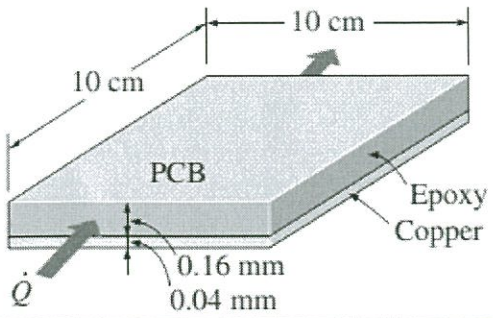
17TE12-DESIGN OF THERMAL SYSTEMS

(TE)

Time : 3 hours | Max. Marks : 60

Answer one question from each unit.
All questions carry equal marks

S.No	Questions	Marks	CO	BL
1(a)	Differentiate the LMTD and NTU techniques used to establish the final expressions for parallel and counter flow type of heat exchangers.	6M	CO1	L2
(b)	In one shell and two pass type of heat exchanger, oil at a temperature of 250°C is cooled to 150°C by circulating cooling water which rises from 30°C to 90°C. Calculate the LMTD of the heat exchanger, if oil is the shell side fluid.	6M	CO1	L3
	(OR)			
2(a)	Analyze the various factors considered in the design and optimization of heat exchangers.	6M	CO1	L4
(b)	A heat exchanger is to be designed to cool an ethy1 glycol solution with m_h = 8.7 kg/s, Cp_h=3840 J/Kg °C from T_1=75°C to T_2=45°C with cooling water entering the tube side at t_1=15°C at a mass flow rate of m_c=9.6 kg/s. The overall heat transfer coefficient based on outer tube surface U_0=500 W/m² °C. Calculate the heat transfer area for each of the following flow arrangements. i) Parallel flow shell and tube ii) Counter flow Shell and tube	6M	CO1	L3
3(a)	Analyze the physical mechanism of heat transfer in condensers with mathematical expressions considering various resistances in the circuit.	6M	CO2	L4
(b)	Saturated steam at 120°C is condensing on the outer tube surface of a single pass heat exchanger. The heat transfer coefficient is 1800 W/m²K. Determine the surface area of heat exchanger capable of heating 1000 kg/h of water from 20°C to 90°C. Also compute the rate of condensation of steam.	6M	CO2	L3
	(OR)			
4(a)	What will be the effect of fouling factor on condenser tubes?	6M	CO2	L1
(b)	A 10 TR ammonia ice plant has a two pass shell and tube water cooled condenser. The water enters at 30°C. The temperature rise of water may be taken as 2.5°C. The refrigerant condensing temperature is 35°C. The heat rejection ratio of the plant is 1.35. The condenser has 24 steel tubes of 21 mm OD and 13.65 mm ID. Determine tube length.	6M	CO2	L3
5(a)	Describe the mechanism of evaporation of liquid with various boiling regimes at the heated surface with heat transfer correlations.	6M	CO3	L2
(b)	Show the importance of pressure drop criteria in the design of evaporators.	6M	CO3	L3
	(OR)			
6(a)	Write the factors affecting the heat transfer capacity of an evaporator.	6M	CO3	L2

(b)	Analyze the heat transfer augmentation methods in evaporators.	6M	CO3	L4
7(a)	On what factors does the capacity of cooling towers and spray ponds depend?	6M	CO4	L1
(b)	Calculate the make- up water required for a cooling tower system circulating the water at 5000 m^3/hr. The cooling range is 12°C and allowable concentration ratio is 3. Assume that an evaporation loss of 2% of the circulating water quantity for every 6°C and windage loss is 0.2%. The blow down is given by B= (E/C-1)-W where C is permissible concentration ratio, calculate the make-up water M=E+W+B where E is the evaporation loss, W is the drift and windage loss and B is the blow down rate.	6M	CO4	L3
	(OR)			
8(a)	Formulate an expression for calculating the quantity of rate of make-up water due to evaporation of water as it falls down a cooling tower.	6M	CO4	L3
(b)	What are the principles adopted for the design of cooling ponds?	6M	CO4	L1
9(a)	How the heat frames are useful for the electronic components in carrying out heat? Explain it with neat sketch.	6M	CO5	L2
(b)	The experiment is conducted to determine the junction-to-case thermal resistance of an electronic component. Power is supplied to the component from a 15-V source and the variations in the electric current and in the junction and the case temperatures with time are observed. When things are stabilized, the current is observed to be 0.1amp and the temperatures to be 80°C and 55°C at the junction and the case, respectively. Calculate the junction-to-case resistance of this component.	6M	CO5	L3
	(OR)			
10(a)	Briefly describe the importance of conduction cooling in electronic components.	6M	CO5	L1
(b)	Heat is to be conducted along a PCB with copper cladding on one side. The PCB is 10 cm long and 10 cm wide, and the thickness of the copper and epoxy layers are 0.04 mm and 0.16 mm, respectively. Disregarding heat transfer from side surfaces, determine the percentages of heat conduction along the copper (k=386 W/m·°C) and epoxy (k= 0.26 W/m·°C) layers. Also, determine the effective thermal conductivity of the PCB. 	6M	CO5	L3

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