

R19

III B.TECH I SEM

SUPPLEMENTARY EXAMINATIONS

OCTOBER 2023

(R19) III B.TECH I SEM SUPPLEMENTARY END EXAMINATIONS OCTOBER - 2023

TIME TABLE

DATE	03-10-2023	05-10-2023	07-10-2023	10-10-2023	12-10-2023	14-10-2023
CIVIL ENGG.	ENTREPRENEURSHIP AND INNOVATION 19BCC5TH01 ✓	STRUCTURAL ANALYSIS-II 19BCE5TH02 ✓	DESIGN OF REINFORCED CONCRETE STRUCTURES 19BCE5TH03 ✓	SOIL MECHANICS 19BCE5TH04 ✓	CONCRETE TECHNOLOGY 19BCE5TH05 ✓	DISASTER MANAGEMENT (OE-II) 19BCC5OE01
ELECTRICAL & ELECTRONICS ENGG.	CONTROL SYSTEMS 19BEE5TH01 ✓	POWER ELECTRONICS 19BEE5TH02 ✓	ELECTRICAL TRANSMISSION SYSTEM 19BEE5TH03 ✓	ELECTRICAL MEASUREMENTS 19BEE5TH04 ✓	SPECIAL ELECTRICAL MECHINES 19BEE5PE05 ✓	NON-CONVENTIONAL ENERGY RESOURCES (OE-II) 19BCC5OE03
MECHANICAL ENGG.	ENTREPRENEURSHIP AND INNOVATION 19BCC5TH01 ✓	BUSINESS MANAGEMENT CONCEPTS FOR ENGINEERS 19BME5TH02 ✓	METAL CUTTING & MACHINE TOOLS 19BME5TH03 ✓	HEAT POWER ENGINEERING 19BME5TH04 ✓	DESIGN OF MACHINE ELEMENTS -I 19BME5TH05 ✓	OOOPS THROUGH JAVA (OE-II) 19BCC5OE10 ✓
ELECTRONICS & COMMUNICATION ENGG.	ENTREPRENEURSHIP AND INNOVATION 19BCC5TH01 ✓	LINEAR & DIGITAL IC APPLICATIONS 19BEC5TH02 ✓	PULSE AND DIGITAL CIRCUITS 19BEC5TH03 ✓	CONTROL SYSTEMS 19BEC5TH04 ✓	COMPUTER ORGANIZATION AND MICROPROCESSORS 19BEC5TH05 ✓	CONSUMER ELECTRONICS 19BCC5OE08 ✓
COMPUTER SCIENCE & ENGG.	OPERATING SYSTEMS 19BCI5TH01 ✓	COMPILER DESIGN 19BCI5TH02 ✓	COMPUTER NETWORKS 19BCS5TH03 ✓	OOAD THROUGH UML 19BCS5TH04 ✓	ADVANCED JAVA AND WEB TECHNOLOGIES 19CS5TH05 ✓	DATAMARE HOUSING AND DATA MINING (DMDM) 19BCT5TH06 ✓
IT	OPERATING SYSTEMS 19BCI5TH01 ✓	WEB DEVELOPMENT USING MEAN STACK 19BIT5TH02 ✓	DESIGN AND ANALYSIS OF ALGORITHMS 19BIT5TH03 ✓	SOFTWARE ENGINEERING 19BIT5TH04 ✓	CRYPTOGRAPHY AND NETWORK SECURITY 19BIT5TH05 ✓	DATAMARE HOUSING AND DATA MINING (DMDM) 19BCT5TH06 ✓

NOTE:

- I. ANY OMISSION OR CLASHES IN THIS TIME TABLE MAY PLEASE BE INFORMED TO THE CONTROLLER OF EXAMINATIONS, IMMEDIATELY.
- II. EVEN IF GOVERNMENT DECLARES HOLIDAY ON ANY OF THE ABOVE DATES, THE EXAMINATIONS SHALL BE CONDUCTED AS USUAL.
- III. THE HODs ARE REQUESTED TO INFORM THE EXAMINATION SECTION (AUTONOMOUS) ANY OTHER SUBSTITUTE SUBJECTS THAT ARE NOT INCLUDED IN THE ABOVE LIST IMMEDIATELY.

M. S. S.

CHIEF CONTROLLER OF EXAMINATIONS



NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

III B. Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCC5TH01 ENTREPRENEURSHIP AND INNOVATION

Time: 3 hours

(Common to CE, ME, ECE)

Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	Define entrepreneurs. Explain different types of entrepreneurs in detail	K2	1	12M
	OR				
	b	i) Explain the concept of entrepreneurship with an example. ii) Brief out the Financial Support of Commercial Banks to entrepreneurship	K2	1	6M
2	Unit-II				
	a	Elaborate the steps-by-steps process in creativity.	K6	2	12M
	OR				
	b	i) What is innovation and explain the importance of innovation process ii) Distinguish the Creativity and Innovation with an example.	K6	2	6M
3	Unit-III				
	a	i) Discuss the phases of EDP for new entrepreneurs ii) What is the training programme to inculcate entrepreneurial spirit?	K6	3	6M
	OR				
	b	i) What do you mean by Entrepreneurship Development Program? Explain the needs and objectives of EDP in India.	K6	3	12M
4	Unit-IV				
	a	i) Explain the sources of business Idea. ii) List out the various methods of generating ideas	K5	4	6M
	OR				
	b	i) what should be included in a project feasibility study ii) How Internal Rate of Return (IRR) differs from Accounting Rate of Return (ARR)	K5	4	6M
5	Unit-V				
	a	i) What are the Government policies to support the MSMEs? ii) Explain the meaning and importance of small and micro entrepreneurs	K4	5	6M
	OR				
	b	i) What is a growth strategy Why does a firm seek to grow? ii) What is sickness in small business and discuss the reasons and remedies for sickness in small business organizations?	K4	5	6M

KL: Knowledge Level CO: Course Outcome M: Marks

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCE5TH02

STRUCTURAL ANALYSIS-II

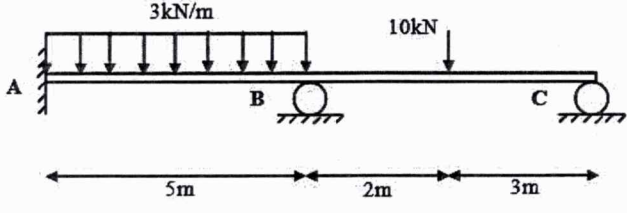
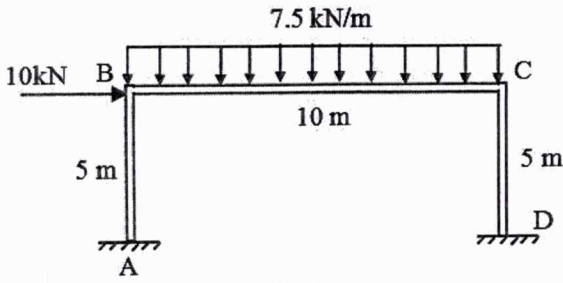
Time: 3 hours

(CE)

Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M
1	Unit-I			
	a A propped cantilever of span 5m carries an UDL of 10kN/m on its whole span. Calculate the reaction at propped support and draw the shear force and bending moment diagrams.	K4	1	12M
OR				
	b A fixed beam AB of span 7m carries an UDL of 20kN/m on its whole span and a point load of 50 kN is acting 2m from left support (A). Calculate the fixed end moments and draw the shear force and bending moment diagrams.	K4	1	12M
2	Unit-II			
	a A three span continuous beam of span AB=3.5m, BC=4m, CD=3.5m. The span AB loaded with an UDL of 3kN/m and span BC loaded with a central point load of 20kN at its centre. The span CD is loaded with a point load of 15kN at 1m from the support D. The support 'A' is assumed as fixed support and remaining all supports are roller supports. Take EI is constant throughout the entire span. Analyse the beam ABCD using Clapeyron's theorem and draw the shear force and bending moment diagram.	K4	2	12M
OR				
	b Derive the three moment equation using Clapeyron's theorem.	K3	2	12M
3	Unit-III			
	a Analyse the continuous beam shown in Fig.1 by slope deflection method. Draw the bending moment diagram. Take EI is constant for entire beam.	K4	3	12M
 <p style="text-align: center;">Fig.1</p>				
OR				
	b Draw the bending moment diagram for the following frame using moment distribution method as shown in Fig.2. Take EI is constant for all members.	K4	4	12M
 <p style="text-align: center;">Fig.2</p>				

4	Unit-IV			K4	5	12M
	a	Analyse the continuous beam as shown in Fig.3 by Kani's method.				
<p style="text-align: center;">Fig.3</p>						
OR						
5	Unit-V			K4	5	12M
	b	Analyse the portal frame as shown in Fig.4 by Kani's method				
<p style="text-align: center;">Fig.4</p>						
OR						
5	Unit-V			K4	6	12M
	a	Analyse the continuous beam as shown in Fig. 3 by stiffness matrix method.				
<p style="text-align: center;">Fig.5</p>						

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCE5TH03 DESIGN OF REINFORCED CONCRETE STRUCTURES

Time: 3 hours

(CE)

Max. Marks: 60

Note: Answer All FIVE Questions. All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
Unit-I					
1	a i) Determine moment of resistance and uniformly distributed super-imposed load carried by a simply supported singly reinforced R.C. beam having effective span 5m and a cross section of 300 x 555 reinforced with 5-20mm dia. Use M 15 concrete and Fe 250 steel.	KL3	1	6M	
	ii) A Tee beam has an effective flange width of 2500mm and depth of flange is 150mm, width of rib is 300mm, effective depth is 800mm. Using M20 grade concrete and Fe415 HYSD bars, estimate the area of tension reinforcement required if the section has to resist a design ultimate moment of 1200 KN.m?	KL3	1	6M	
	OR				
b	A reinforced concrete beam 230 mm wide and 430 mm effective depth is provided with M20 grade of concrete and Fe 415 grade of steel. The beam has to resist the three different design moments (a) 90 kN-m (b) 117 kN-m (c) 140 kN. Find for which bending moment the beam will be designed as a singly reinforced or doubly reinforced section	KL3	1	12M	
Unit-II					
2	a A doubly reinforced rectangular concrete beam has a width of 300 mm and an effective depth of 500 mm. The beam is reinforced with 1600 mm ² of steel in tension and 628 mm ² of steel in compression. The effective cover for compression steel is 50 mm. Assume that both tension and compression steel yield. The grades of concrete and steel used are M20 and Fe415 respectively. Considering the value of fsc 351MPa, determine the depth of NA and moment of resistance of the beam.	KL3	2	12M	
	OR				
	b i) Explain the role of Partial load and safety factors in the design of RC elements.	KL4	2	6M	
	ii) A rectangular reinforced concrete beam is simply supported on two masonry walls 230 mm thick and 6.5m apart (centre to centre). The beam has to carry, in addition to its own weight, a distributed live load of 10 kN/m and a dead load of 5kN/m. Design the beam section for maximum moment at mid span. Assume M20 concrete and Fe 415 steel.	KL3	2	6M	
Unit-III					
3	a i) Design the torsional reinforcement in a rectangular beam section, 350mm wide and 650mm deep and it is subject to an ultimate twisting moment of 170KNm, combined with an ultimate (hogging) bending moment of 260KNm and an ultimate shear force of 180KN. Assume M20 grade concrete and Fe 415 steel and mild exposure conditions	KL3	3	6M	
	ii) Design a rectangular beam section of 230 mm width subjected to an ultimate bending moment of 90 kNm and an ultimate shear force of 50 kN . Assume M 20 grade concrete and Fe 500 grade steel	KL3	3	6M	
	OR				
b	A rectangular cantilever beam of span 4m is 350mmX650mm in cross section. Bending moment at the support due to uniformly distributed service loads is 150 kNm out of which 50% moment is due to permanent loads. Check the beam for deflection. It carries 3-25mmbars in tension at an effective cover of 50mm. M20 grade concrete and Fe415 steel are used.	KL3	3	12M	

		Unit-IV				
4	a	i) Design a short circular column of diameter 350 mm to support a factored axial load of 1200kN, together with a factored moment of 100kNm. Adopt M20 grade concrete and Fe415 HYSD bars	KL3	4	6M	
		ii) An R.C. Column 400mm x 450mm is subjected to an axial ultimate load of 2200KN and bent in single curvature about the minor axis M_y (top) = 80KNm and M_y (bottom) = 100KNm as ultimate moments. If L_o = 6m and L_e = 4.50m on both axes, calculate the design moments for the column.	KL3	4	6M	
	OR					
	b	Design a rectangular footing for a column of size 350mm x 450mm using 20mm diameter bars to transmit characteristic loads of 600KN as dead load and 400KN as live load to a foundation with safe bearing capacity of 120KN/m ² . Assume M20 grade concrete and Fe415 grade steel. Draw the reinforcement details	KL3	4	12M	
		Unit-V				
5	a	Design a simply supported slab to cover a room with internal dimensions 4.0 m x 5.0 m and 230 mm thick brick walls all around. Assume a live load of 3 kN / m ² and a finish load of 1 kN/m ² . Use M20 concrete and Fe 415 steel. Assume that the slab corners are free to lift up. Draw to a suitable scale (a) Longitudinal section showing the reinforcement details. (b) Cross section of the slab showing reinforcement details	KL3	5	12M	
	OR					
		b	i) Design a simply supported one –way slab over a clear span of 3.5 m. It carries a live load of 4 kN/m ² and floor finish of 1.5 kN/m ² . The width of supporting wall is 230 mm. Adopt M20 concrete & Fe-415 steel.	KL3	5	6M
		ii) A hall in a building of clear dimension 14.10 m x 9.7 m is to be provided a floor consisting of a continuous slab cast monolithically with 300 mm wide beams spaced at 3.6 m c/c and supported on 300 mm wall at ends. The floor is to support a live load of 3 kN/m ² , Partition load of 1.0 kN/m ² and finishes at 1.0 kN/m ² . Design the continuous slab taking M-20 grade of concrete and Fe-415 steel.	KL3	5	6M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCE5TH04

SOIL MECHANICS

Time: 3 hours

(CE)

Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	i) What are the major soil deposits of India? What are the characteristics?	K1	1	6M
		ii) What is phase diagram? Explain the identifications of soil type using phase diagram.	K2	1	6M
	OR				
	b	i) Establish the relationship between specific gravity, degree of saturation, voids ratio and moisture content of soil.	K2	1	6M
		ii) Find the volume of voids if the weight of a dry soil sample is 70g and the total volume of sample 43g and specific gravity of solids is 2.67. Also find the voids ratio.	K4	1	6M
2	Unit-II				
	a	i) Describe on Atterberg's limits. Explain the method of determining any one of the limit.	K3	2	6M
		ii) What is index properties of soil? List out the various index properties of soil.	K2	2	6M
	OR				
	b	i) State the principle of Darcy's law.	K2	2	6M
		ii) What do you mean by permeability of soil? List out the factors affecting the permeability.	K1	2	6M
3	Unit-III				
	a	i) Explain the effective stress in soil saturated by capillary action.	K3	3	6M
		ii) Define quick sand condition and derive the expression for critical hydraulic gradient.	K2	3	6M
	OR				
b	A rectangular foundation 2.2m x 3.6m, transmits a uniform pressure of 400 kN/m ³ to the underlying soil. Determine the vertical stress at a depth of 1m below the foundation at a point within the loaded area, 0.9m away from a short edge and 0.6m away from a long edge. Use Boussinesq's theory.	K4	3	12M	
4	Unit-IV				
	a	i) List out the factors affect the compaction of soil. Explain in brief.	K2	4	6M
		ii) Explain the laboratory procedure for proctor compaction test.	K5	4	6M
	OR				
	b	i) What is the difference between compaction and consolidation? Write a notes on Terzaghi's theory of consolidation.	K3	4	6M
		ii) Explain the laboratory soil consolidation test.	K5	4	6M
5	Unit-V				
	a	i) How to determine the shear strength of cohesionless soil by a laboratory method.	K5	5	6M
		ii) Explain a brief notes on the Mohr's circle.	K2	5	6M

OR					
		i) Write a note on the laboratory tri-axial shear test.	K2	5	6M
	b	ii) In a drained tri-axial compression test conducted on dry sand, failure occurred at a deviatoric stress of 220 kN/m ² when the cell pressure is 60 kN/m ² . Calculate the angle of shearing resistance and the inclination of failure plane to the major principle plane.	K5	5	6M

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks

Subject Code: 19BCE5TH05

III B.Tech - I Semester Supple Examinations, October-2023

CONCRETE TECHNOLOGY

Time: 3 hours

Max Marks: 60

Note: Answer All FIVE Questions.
All Questions Carry Equal Marks (5 X 12 =60M)

QNo	Questions	K L	CO	Marks	
Unit-I					
1	a	What are the reactions of hydration of the main compounds in portland cement?	K1	1	6M
		Explain dry process of manufacturing the cement with neat diagram. Explain advantages over the wet process	K1	1	6M
	OR				
	b	Explain with a neat sketch of Fineness test by air permeability apparatus.	K2	1	6M
	Explain briefly the Tests and specifications ordinary Portland cement.	K2	1	6M	
Unit-II					
2	a	What is the affect of size of aggregate on concrete?	K2	2	6M
		What are the acceptable limits of various quantities and I. S. Code provision governing them?	K2	2	6M
	OR				
	b	Bring out a detailed discussion on Alkali Aggregate reaction? Discuss the factors promoting and methods to control.	K3	2	12M
Unit-III					
3	a	Write about retarders, accelerators and plasticizers	K1	3	6M
		Write about mineral admixture and chemical admixtures.	K1	3	6M
	OR				
	b	What is segregation and bleeding of concrete why they occur, discuss how to prevent them	K2	3	6M
	What are the different steps in the manufacture of concrete?	K3	3	6M	
Unit-IV					
4	a	What are the different steps in the IS method of mix design?	K4	4	6M
		What are the factors for choosing mix proportions?	K2	4	6M
	OR				
	b	Design a concrete mix for construction of an elevated water tank. The characteristic compressive strength of concrete is 40MPa at 28days. Assume standard deviation as 5MPa. The specific gravities of coarse and fine aggregates are 2.64 and 2.68 respectively. The dry rodded bulk density of coarse aggregate is 1600Kg/cum, and fineness modulus of sand is 2.80. OPC (Type I) is to be used. A slump of 75mm is required. The water absorption of coarse aggregate is 1% and free surface moisture in sand is 2%. Assume any other data missing suitably. Use ACI method of mix design.	K4	4	12M

Unit-V					
5	a	Explain about the Sulphate attack on concrete.	K3	5	6M
		Explain about the corrosion preventive measures	K3	5	6M
	OR				
	b	Write about i) Shot Crete concrete ii) Self-compacting concrete iii) light weight aggregate concrete.	K4	5	6M
Explain about the properties and applications of high strength and Reactive Powder Concrete.		K3	5	6M	

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BEE5TH02

POWER ELECTRONICS

Time: 3 hours

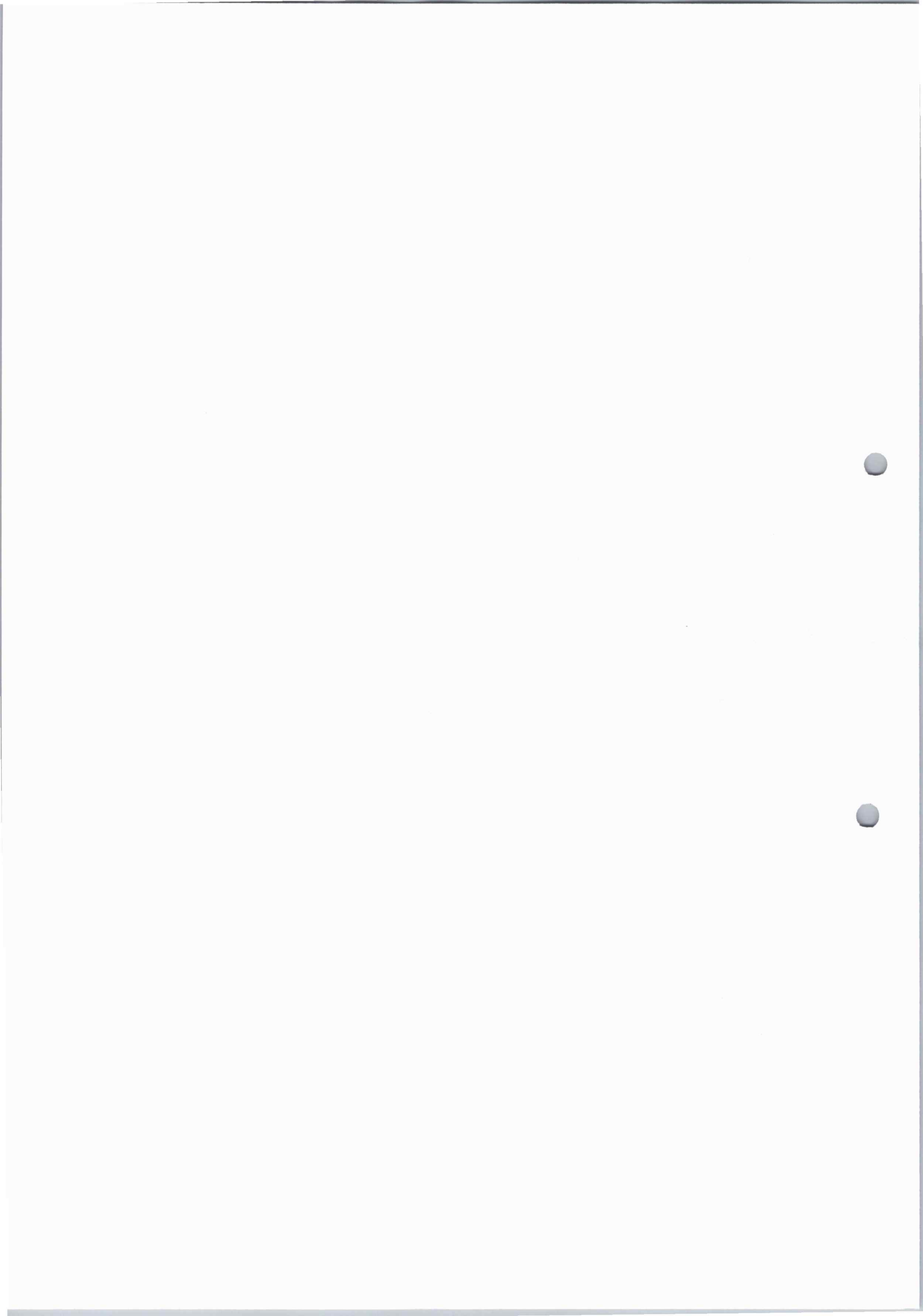
(EEE)

Max. Marks: 60

Note: Answer All FIVE Questions. All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	i) Analyze the operation of Power MOSFET and draw its characteristics.	K3	1	8M
		ii) Draw snubber circuit and mention its purpose.	K2	1	4M
	OR				
	b	i) Describe various Turn-ON methods of SCR.	K3	1	8M
		ii) Compare the differences between SCR, MOSFET and IGBT.	K2	1	4M
2	Unit-II				
	a	Describe the operation of single-phase fully controlled bridge converter with RL load and derive its average & RMS output voltages.	K3	2	12M
	OR				
	b	i) Explain the effect of free-wheeling diode on phase-controlled rectifiers.	K3	2	4M
	ii) Analyze the operation of single-phase half-controlled bridge converter with R load.	K3	2	8M	
3	Unit-III				
	a	Describe the operation of 3-phase converter with R load.	K3	3	12M
	OR				
	b	i) Explain the effect of source inductance on converter operation.	K3	3	6M
	ii) Analyze the application of single-phase dual converter.	K3	3	6M	
4	Unit-IV				
	a	i) Write some applications of AC Voltage controllers.	K2	4	4M
		ii) Analyze the operation of the single-phase AC voltage controller with RL load.	K3	4	8M
	OR				
	b	i) Describe the operation of step down cycloconverter for $F_o = 4F_s$.	K3	4	8M
		ii) Analyze the difference between midpoint and bridge type circuit configuration of the cycloconverters	K4	4	4M
5	Unit-V				
	a	Explain the operation of 120 deg conduction mode of 3-phase inverter	K3	5	12M
	OR				
	b	i) Explain the dynamics of the DC-DC Boost converter and derive the output voltage equation.	K3	5	6M
	ii) Write a short note on Sine PWM method.	K3	5	6M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks



III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BEE5TH03 ELECTRICAL TRANSMISSION SYSTEM

Time: 3 hours

(EEE)

Max. Marks: 60

Note: Answer All FIVE Questions. All Questions Carry Equal Marks (5 X 12 = 60M)

Q. No	Questions	KL	CO	M	
Unit-I					
1	a	i) Derive the expression for the inductance per km of a single phase transmission line	K3	CO1	6M
		ii) Explain skin and proximity effects on transmission line.	K2	CO1	6M
	OR				
	b	i) Derive the expression for capacitance of three phase lines	K3	CO1	6M
	ii) Explain the Effect of Earth on the capacitance of three phase lines	K2	CO1	6M	
Unit-II					
2	a	Derive the expressions for the ABCD constants for the nominal T and nominal-circuit of a medium transmission line	K3	CO2	12M
	OR				
	b	i) Derive an expression for voltage regulation of short transmission line	K3	CO2	6M
		ii) A 3-phase 50 Hz transmission line has resistance, inductance and capacitance per phase of 10 Ω , 0.1 H, and 0.9 μF and delivers a load of 35MW at 132 kV and 0.8 pf lag. Determine the efficiency and regulation of the line using nominal- T method.	K3	CO2	6M
Unit-III					
3	a	i) Discuss the phenomenon of wave reflection and refraction	K2	CO3	6M
		ii) A 500 kV surge travels on an overhead line of surge impedance 400 towards its junction with a cable which has a surge impedance of 40 . Find (i) transmitted voltage and current (ii) reflected voltage and current.	K3	CO3	6M
	OR				
	b	i) Derive reflection and refraction coefficient of transmission line when terminated through a resistance.	K3	CO3	6M
	ii) Write short note on Attenuation of Travelling waves	K1	CO3	6M	
Unit-IV					
4	a	i) Derive the expression for sag when the supports are at equal heights.	K3	CO4	6M
		ii) Explain the effects of wind and ice loading on sag in transmission line.	K4	CO4	6M
	OR				
	b	i) Define String Efficiency. Describe the methods of improving the string efficiency.	K2	CO4	6M
	ii) A three phase overhead line is being supported by tree discs suspension insulators, the potential across the first and second insulators are 7 and 10 kV respectively. Calculate (i) the line voltage, (ii) the ratio of capacitance between pin and earth to self-capacitance of each unit, (iii) the string efficiency	K3	CO4	6M	
Unit-V					
5	a	i) Explain the capacitance grading of cable.	K2	CO5	6M
		ii) Derive the equation for capacitance of a 3 core-cable.	K3	CO5	6M
	OR				
	b	i) Define corona and derive the expression for critical disruptive voltage.	K3	CO5	6M
	ii) Explain the factors that affect the corona loss on an overhead transmission line.	K2	CO5	6M	

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BEE5TH04

ELECTRICAL MEASUREMENTS

Time: 3 hours

(EEE)

Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	i) Derive the equation for deflection torque if the instrument is spring controlled.	4	1	6M
		ii) Explain the construction and operation of moving iron instruments.	2	1	6M
	OR				
		i) Errors in measurements can be classified as (i) Gross Errors(ii) systematic errors (iii) random errors. Explain these errors by giving suitable examples. Discuss the mean adopted to minimize these errors.	4	1	6M
	b	ii) A shunt type ohmmeter uses a 10 mA basic D'arsonval movement with an internal resistance of 5 ohms. The battery emf is 3 V. It is desired to modify the circuit by adding appropriate shunt resistances across the movement so that its instrument indicates 0.5 ohms at the midpoint on its scale. Calculate: i. The value of shunt resistance ii. Value of current limiting resistance R_1 .	3	1	6M
2	Unit-II				
	a	Explain how do you measure reactive power in a 3-phase circuit with the help of only one wattmeter? Draw the relevant circuit and phasor diagrams.	3	2	12M
	OR				
	b	i) explain the constructional details of Electrodynamometer type wattmeter? ii) Explain the sources of errors in single phase induction type energy meter?	2	2	6M
3	Unit-III				
	a	i) the following readings are obtained for one month of 30 days, KVAhr meter=38,830, KWh meter=291,940. Demand indicator =1400KW. find out the average monthly load factor and power factor?	3	3	6M
		ii) Explain the loss of charge method for measurements of insulation resistance of cables.	3	2	6M

	OR			
	i) Draw the circuit of Wheatstone bridge and derive the conditions of balance?	3	2	6M
b	ii) A wheat stone bridge has ratio arms of 1000 ohms and 100 ohms and is being used to measure an unknown resistance of 25 ohms. Two galvanometers are available. Galvanometer A has a resistance of 50 ohms and a sensitivity of 200mm/ μ A and galvanometer B has values 600 ohms and 500mm/ μ A, which of the two galvanometers more is sensitive to a small unbalance on the bridge and what is the ratio of sensitivities?	3	3	6M
	Unit-IV			
a	i) Describe how an unknown capacitance can be measured with the help of D'Sauty's bridge.	4	2	6M
	ii) Describe the sources and null detectors that are used for ac bridges.	4	2	6M
	OR			
4	i) Derive the equations of balance for an anderson's bridge. Draw the phasor diagram for conditions under balance. Discuss the advantages and disadvantages of the bridge.	4	2	6M
b	ii) Explain how Weins bridge can be used for experimental determination of frequency. Derive the expression for frequency in terms of bridge parameters.	4	2	6M
	Unit-V			
	i) Explain the different types of transducers and its advantages.	5	2	6M
a	ii) Explain the working principle of Capacitive transducer and its applications.	5	2	6M
	OR			
	i) Explain the working of LVDT and its applications.	5	2	6M
b	ii) Explain the working principle of Strain guage and its applications.	5	2	6M

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BEC5TH03

PULSE AND DIGITAL CIRCUITS

Time: 3 hours

(ECE)

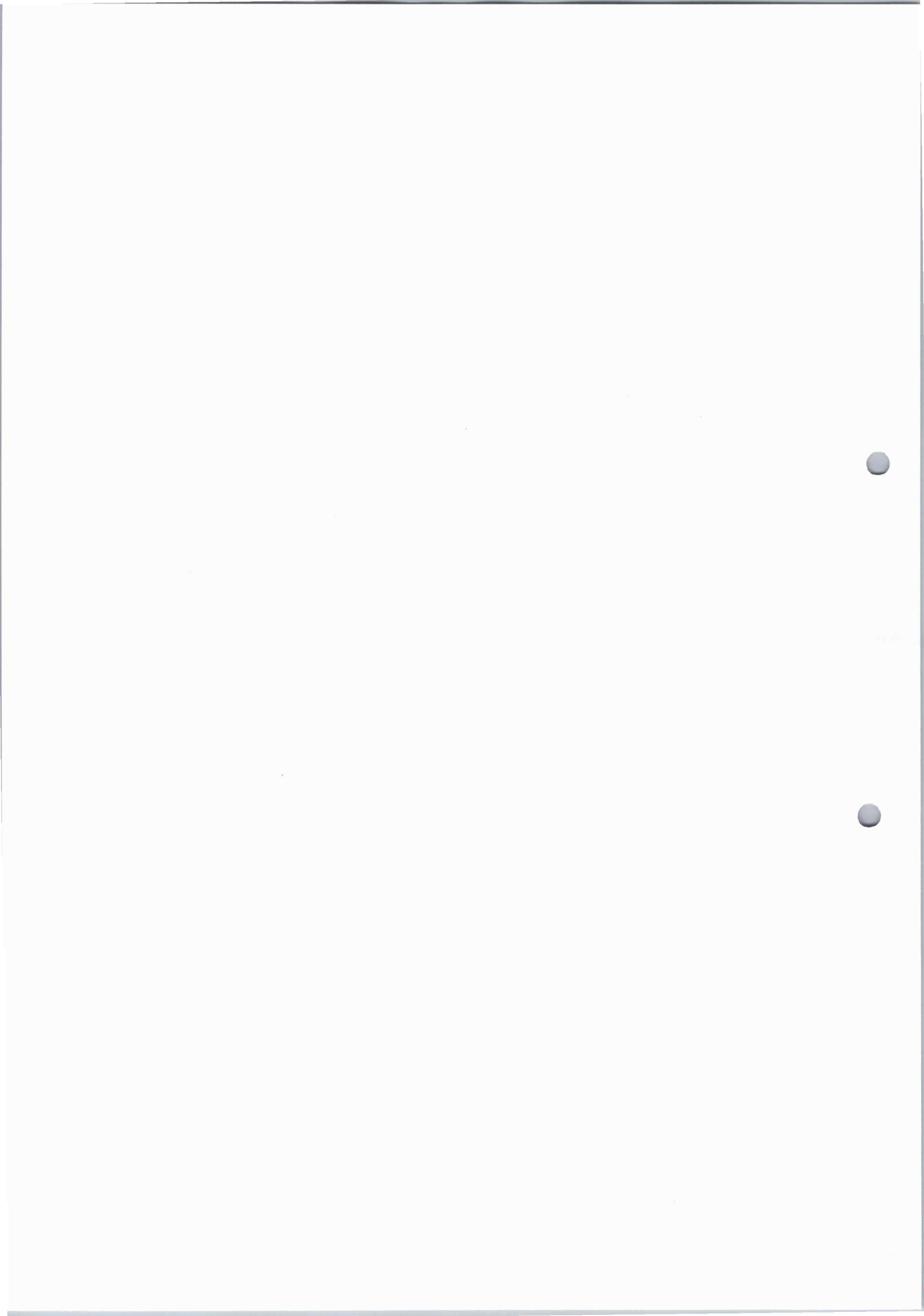
Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
Unit-I					
1	a	i) A square wave whose peak to peak amplitude is 2 V extends ± 1 V with respect to ground. The duration of the positive section is 0.1 s and that of the negative section is 0.2 s. if this waveform is impressed upon an RC integrating circuit whose time constant is 0.2 s, what are the steady-state maximum and minimum values of the output waveform?	K3	CO1	6M
		ii) Prove that for any periodic input waveform the average level of the steady-state output signal from the RC high pass circuit is always zero.	K2	CO1	6M
	OR				
	b	i) Explain the response of high pass RC circuit for a step input signal.	K1	CO1	6M
	ii) A periodic waveform is applied to an RC low-pass circuit with $10 V_{pp}$ is a square wave with $T_1=0.1$ sec, $T_2=0.2$ sec and the time constant $\tau=0.1$ sec. Draw the output waveform and mark all voltages.	K3	CO1	6M	
Unit-II					
2	a	Explain the operation of two level emitter coupled transistor clipper with the help of input and output waveforms	K1	CO2	12M
	OR				
	b	i) Classify different types of clipper circuits. Given their circuit and explain their operation with the aid of transfer characteristics.	K2	CO2	6M
	ii) Design a diode clamper circuit to clamp the positive peaks of the input signal at zero level. The frequency of the input voltage is 1KHz.	K4	CO2	6M	
Unit-III					
3	a	i) Explain in detail about Transistor Switching times.	K1	CO3	12M
	OR				
	b	i) Explain about diode forward recovery time and diode reverse recovery time.	K1	CO3	6M
	ii) Compare various Logic families	K2	CO3	6M	
Unit-IV					
4	a	i) Draw the circuit diagram of the astable multivibrator and explain its operation. Why it is called a free-running oscillator?	K3	CO4	12M
	OR				
	b	i) Silicon transistors with $h_{FE}(\min) = 20$ are available, If $V_{CC} = V_{BB} = 10$ V, design the bistable multivibrator.	K4	CO4	6M 6M
Unit-V					
5	a	i) Derive the relation between slope transmission and displacement errors.	K3	CO5	6M
		ii) With a neat sketch explain about transistor Miller time base generator.	K3	CO5	6M
	OR				
	b	i) Draw the circuit diagram of two input Diode OR gate and explain it.	K3	CO5	6M
		ii) Explain the operation of four diode sampling gate.	K1	CO5	6M

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks



III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BEC5TH04

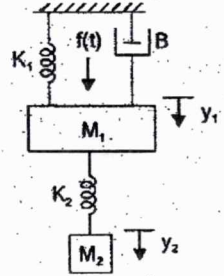
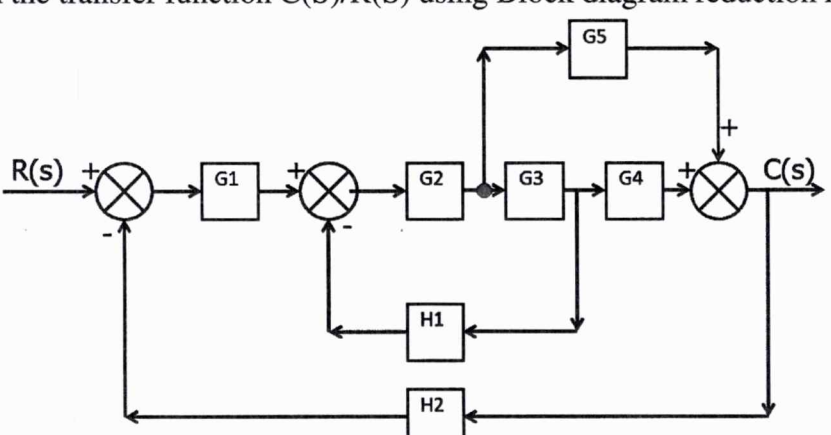
CONTROL SYSTEMS

Time: 3 hours

(ECE)

Max. Marks: 60

Note: Answer All FIVE Questions.
All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M
Unit-I				
1	a) i) Differentiate between open loop and closed loop control systems using one example. ii) Determine the transfer function $Y_2(S)/F(S)$ of the given mechanical system.	K2	CO1	6M
		K3	CO1	6M
OR				
1	b) i) Define transfer function and state the limitations of transfer function approach. ii) Obtain the transfer function $C(S)/R(S)$ using Block diagram reduction rules.	K2	CO1	4M
1		K3	CO1	8M
Unit-II				
2	a) Derive the time response of second order system for underdamp case and draw the time response.	K3	CO2	12M
OR				
2	b) i) Write as short note on standard test inputs. ii) The open-loop transfer function of a unity feedback system is given by $G(S)=500/S(1+0.1S)$. Find the peak overshoot and peak time. If peak overshoot is to be reduced by 20%, what is the change in the gain?	K2	CO2	6M
2	ii) The open-loop transfer function of a unity feedback system is given by $G(S)=500/S(1+0.1S)$. Find the peak overshoot and peak time. If peak overshoot is to be reduced by 20%, what is the change in the gain?	K4	CO2	6M
Unit-III				
3	a) i) Analyze the effect of adding poles to the open loop system on the root locus. ii) Comment on the stability using RH criteria for a unity feedback system whose transfer function is given by	K4	CO3	6M
3	ii) Comment on the stability using RH criteria for a unity feedback system whose transfer function is given by	K3	CO3	6M
3	$G(s) = \frac{K}{s(s-0.5)(s^2-0.6s+10)}$			6M
OR				

	b	Test the stability of the system using root locus for the system whose open loop transfer function $G(S)H(S)$ is given by $\frac{K}{s(s-1)(s^2-4s-13)}$	K3	CO3	12M
Unit-IV					
4		i) Sketch the Bode plot and comment on the stability of the system whose transfer function is $G(s) = \frac{K}{s(1+0.1s)(1+0.5s)}$	K3	CO4	12M
	OR				
		i) State Nyquist stability criteria and explain the concept of mapping & encirclement.	K3	CO4	6M
	b	ii) Sketch the polar plot and determine phase margin and gain margin for the system whose transfer function is given by $G(S) = \frac{K}{S(S+2)(S+10)}$	K3	CO4	6M
Unit-V					
5	a	i) Analyze the applications of lag and lead compensators.	K3	CO5	4M
		ii) Obtain the state model for the transfer function given below $G(s) = \frac{s^2+3s+4}{s^3+2s^2+3s+2}$	K3	CO5	8M
	OR				
	b	i) State the concept the controllability and observability.	K2	CO5	4M
ii) Obtain the state transition matrix for the given system with $A = \begin{bmatrix} 1 & 0 \\ -1 & 2 \end{bmatrix}$		K3	CO5	8M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks

III B.Tech I Semester Supple Examinations, October-2023

Sub Code: 19BEC5TH05 COMPUTER ORGANIZATION AND MICROPROCESSORS

Time: 3 hours

(ECE)

Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	i) Explain the general bus structure of computer	K3	1	6M
		ii) Compare RISC and CISC processor architectures	K3	1	6M
	OR				
	b	i) Describe the functional units of a computer with neat diagram	K3	1	6M
		ii) Explain the factors affecting the performance of a computer system	K4	1	6M
2	Unit-II				
	a	Explain the cache memory organization in detail with block diagram	K4	2	12M
	OR				
	b	i) Discuss about semiconductor memories (RAM and ROM)	K2	2	6M
		ii) Describe about DMA (Direct Memory Access) Communication with block diagram	K3	2	6M
3	Unit-III				
	a	i) Explain the Register organization of 8086 Microprocessor	K4	3	6M
		ii) Develop an Assembly Language Program to find the LCM of two numbers	K3	3	6M
	OR				
	b	i) Discuss about various addressing modes of 8086 with an example	K3	3	6M
		ii) Develop an Assembly Language Program to find the sum of two 32-bit numbers	K3	3	6M
4	Unit-IV				
	a	i) Explain the sequence of steps carried out by 8086 microprocessors when an interrupt occurs	K4	4	6M
		ii) Distinguish between Minimum mode, maximum mode operation of 8086 Microprocessors	K4	4	6M
	OR				
	b	i) Distinguish between Non-Maskable and maskable interrupts	K4	4	6M
		ii) Draw the Interrupt vector table of 8086.	K2	4	6M
5	Unit-V				
	a	i) Describe the modes of operation of 8255	K3	5	6M
		ii) Write a program to Interface A/D converter with 8086 microprocessors using neat sketch	K3	5	6M
	OR				
	b	i) Describe the architecture of 8259A PIC	K3	5	6M
ii) Write a program to Interface stepper motor with 8086 microprocessors using neat sketch		K3	5	6M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCS5TH03

COMPUTER NETWORKS

Time: 3 hours

(CSE)

Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	i) Explain TCP/IP is different from OSI model	2	1	6M
		ii) Discuss about various Network Topologies.	2	1	6M
	OR				
	b	i) Explain about Arpanet in detail	2	1	6M
		ii) Compare and Contrast LAN, MAN and WAN?	3	1	6M
2	Unit-II				
	a	Explain Flow control and Error control techniques with example?	2	2	12M
	OR				
b	i) Write in detail the services provided by Data link layer to Network Layer	2	2	12M	
3	Unit-III				
	a	i) Explain in detail about simplex protocol for Noisy channel	2	3	6M
		ii) Write in detail about the difference between CSMA and CDMA with appropriate diagrams	2	3	6M
	OR				
	b	i) Explain about Simplex Protocol	2	3	6M
		ii) consider an example to explain about ALOHA	2	3	6M
4	Unit-IV				
	a	i) Describe the Routing Information protocol and Distance vector routing protocol	2	4	12M
		OR			
	b	i) Explain IPv4 Frame format	2	4	6M
ii) Describe about Store and Forward Packet Switching		2	4	6M	
5	Unit-V				
	a	i) Explain about the services provided by transport layer to the upper layer	2	5	6M
		ii) Explain in detail about the working principles of SMTP	2	5	6M
	OR				
	b	i) Explain UDP & TCP in detail	2	5	6M
ii) Explain leaky bucket and token bucket algorithm		2	5	6M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCS5TH04

OOAD THROUGH UML

Time: 3 hours

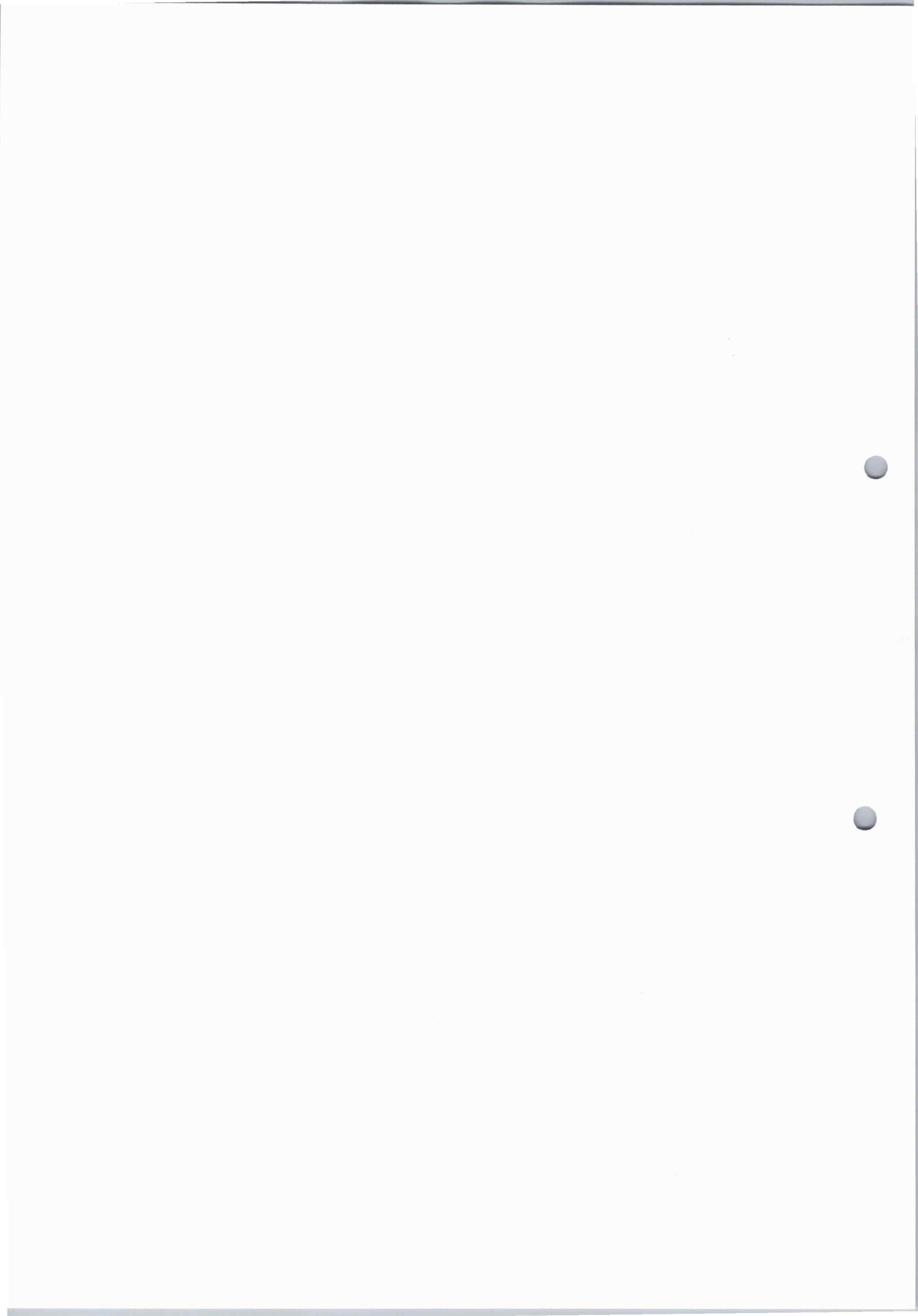
(CSE)

Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
Unit-I					
1	a	i) What are the graphical diagrams defined in UML? Illustrate each.	K3	1	8M
		ii) What is the role of Decomposition and Abstraction in designing complex software systems? Explain	K3	1	4M
	OR				
	b	What is UML? Briefly discuss its purpose. Discuss clearly about different Building Blocks of UML.	K2	1	12 M
Unit-II					
2	a	Discuss the role of classes and objects in analysis and design. Draw and explain the class diagram and object diagram for an airline management system.	K3	2	12 M
	OR				
	b	i) What are the four things that a well-structured class diagram should have? Explain.	K2	2	6M
		ii) Draw the class diagram for university management system	K3	2	6M
Unit-III					
3	a	i) Consider the Library Management system, perform the Object Oriented System Development and give the use case model (use include, extend and generalization).	K3	3	6M
		ii) Draw an interaction diagrams for issuing and returning books from library	K3	3	6M
	OR				
	b	i) Describe Branching and Forking in Activity diagram. Draw Activity diagram for withdrawing money from ATM	K3	3	6M
		ii) Compare and contrast the forward engineering and reverse engineering	K2	3	6M
Unit-IV					
4	a	i) Explain components of State Chart diagram with example.	K3	4	6M
		ii) Define the following Terms. A) Process and Thread B) Time and Space	K3	4	6M
	OR				
	b	i) Define an event and a signal. Explain briefly about the common modelling techniques of events and signals	K3	4	6M
		ii) Draw and explain State diagram of an ATM machine	K3	4	6M
Unit-V					
5	a	i) Draw a diagram that shows set of nodes and their relations for Online Railway Reservation System	K4	5	6M
		ii) Discuss standard stereotypes that can be applied to components in UML	K3	5	6M
	OR				
	b	i) Draw and explain Deployment diagram for hospital management system	K3	5	6M
		ii) Define component, port, and connectors. How component are related with interfaces?	K3	5	6M



III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BIT5TH02 WEB DEVELOPMENT USING MEAN STACK

Time: 3 hours

(IT)

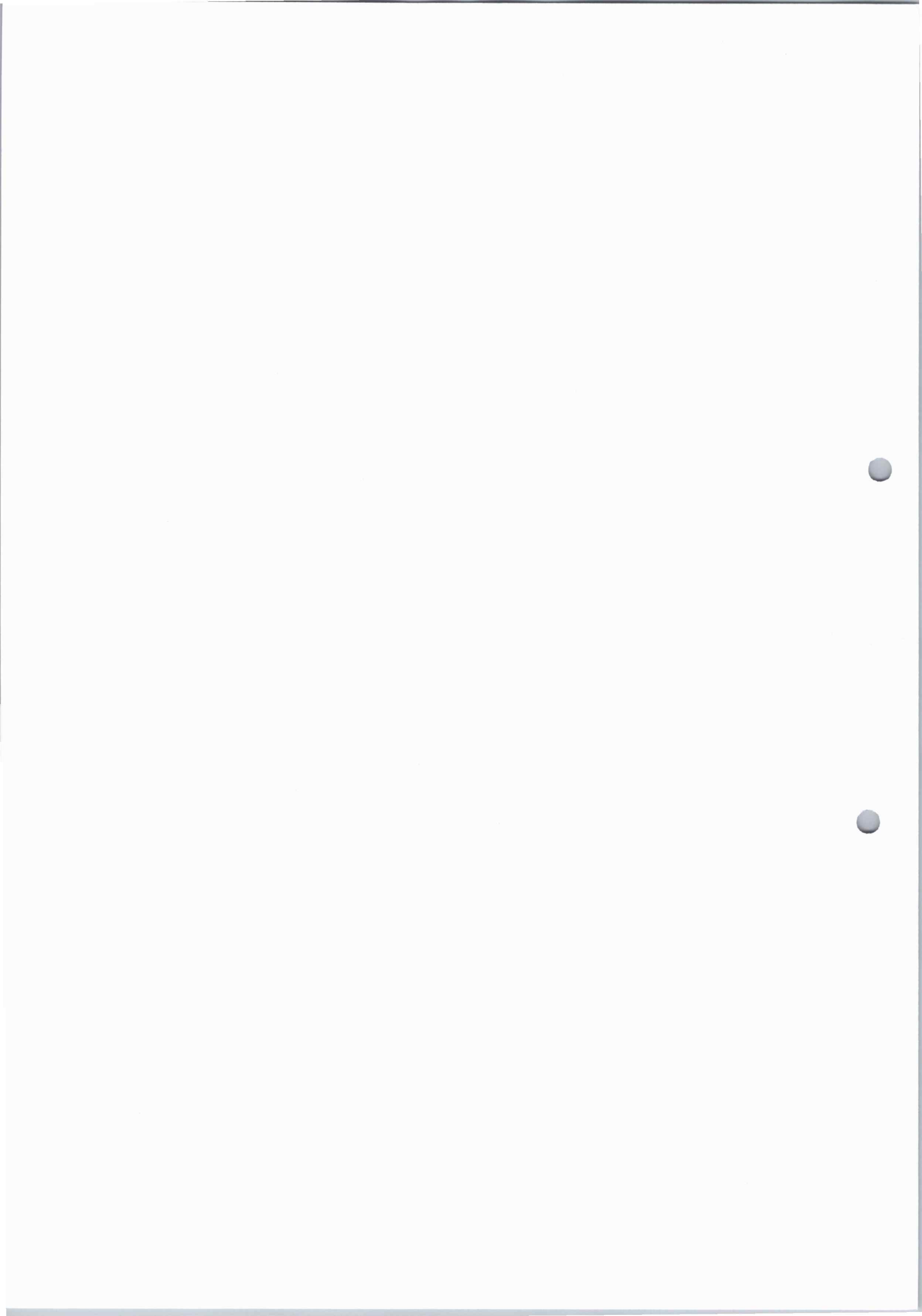
Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	i) Describe the following with suitable examples. a. Components and Templates b. Data Binding	K3	1	6M
		ii) Create an Angular Application Which displays "Welcome to Angular World".	K3	1	6M
	OR				
b	i) Draw a neat sketch for Angular Architecture and explain.	K3	1	6M	
	ii) What is Dependency Injection? List the Built-In Directives in Angular.	K3	1	6M	
2	Unit-II				
		How can you use Expense REST API in Http Client Programming? Illustrate with example.	K3	2	12M
	OR				
	b	i) List Any six Angular CLI Commands and Explain them with suitable examples.	K3	2	6M
	ii) Differentiate between Template Driven Forms and Reactive Forms.	K3	2	6M	
3	Unit-III				
	a	i) Write short notes on Node.js Console and Export Module	K3	3	6M
		ii) How do you include your own Module? Explain with suitable example.	K3	3	6M
	OR				
b	i) How do you make Node.js as a web server?	K3	3	6M	
	ii) Describe Node Package Manager with suitable example.	K3	3	6M	
4	Unit-IV				
	a	i) How do you perform Node.js File System Read and create Operations? Explain with suitable examples.	K3	4	6M
		ii) What is the use of Event Emitter? Describe methods of Event Emitter Class.	K3	4	6M
	OR				
b	i) What is Express.js? Why are you using Express.js	K3	4	6M	
	ii) How do you serve static Resources using Express.js?	K3	4	6M	
5	Unit-V				
	a	i) Write steps to connect MongoDB from Node.js	K3	5	6M
		ii) How do you connect and Create database in MongoDB? Explain with example.	K3	5	6M
	OR				
b	i) List and Explain Query object Operators.	K3	5	6M	
	ii) Write short notes on the following. a. Insert Document b. Update document	K3	5	6M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks



III B.Tech I Semester Supple Examinations, October-2023

Sub Code: 19BCI5TH01

OPERATING SYSTEMS

Time: 3 hours

(Common to CSE, IT)

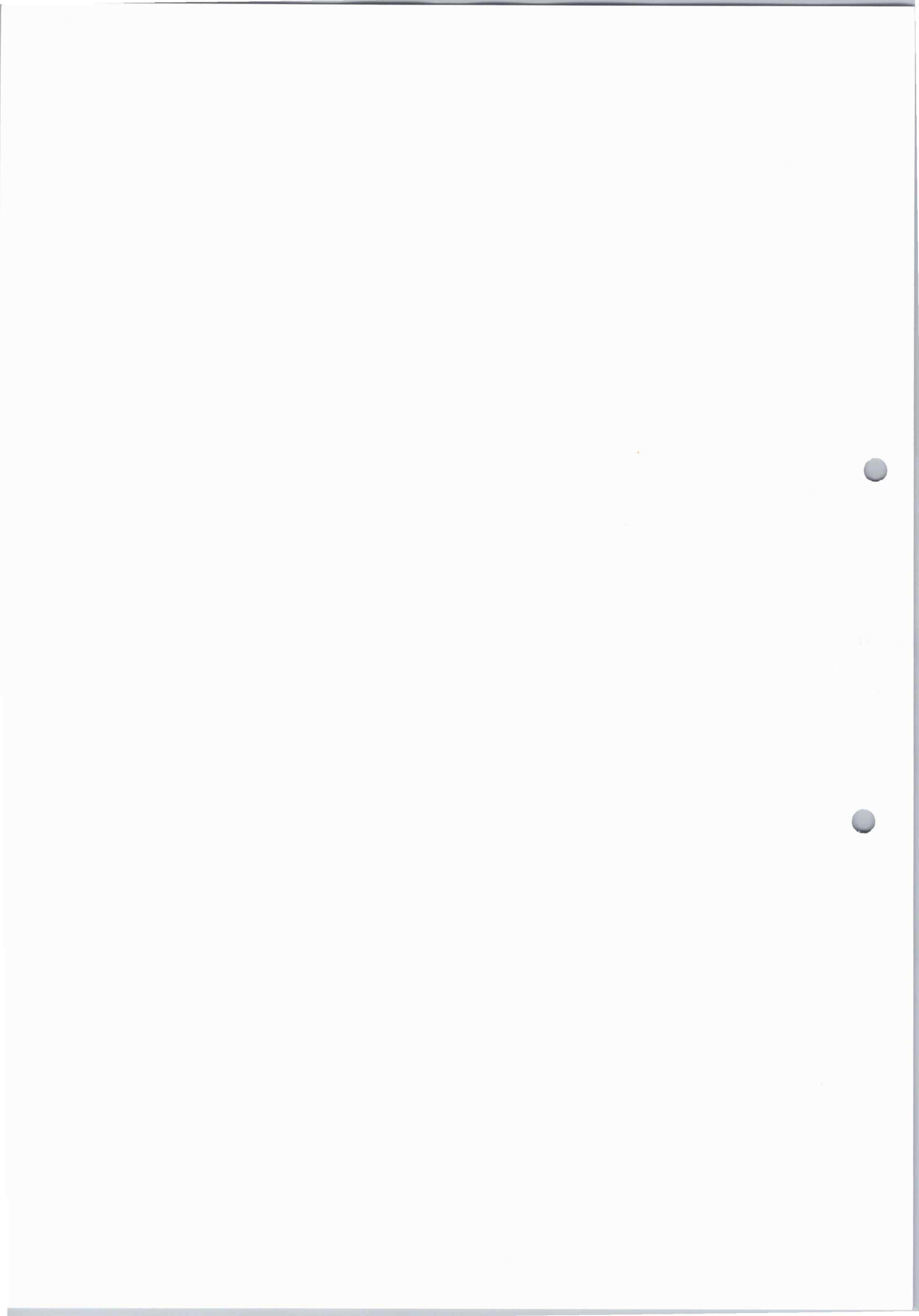
Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	i) What is Operating system? What operating system do?	K2	1	6M
		ii) Explain about operating system operations.	K2	1	6M
	OR				
	b	i) Discuss about Distributed system.	K2	1	6M
		ii) Define System call? List and explain.	K2	1	6M
2	Unit-II				
	a	Explain in detail about CPU Scheduling algorithms.	K3	2	12M
	OR				
	b	i) Write short notes on process control block.	K3	2	6M
ii) How Inter Process communication (IPC) works in a system? Explain.		K2	2	6M	
3	Unit-III				
	a	i) Illustrate critical section problem with an example.	K3	3	6M
		ii) What is semaphore? Explain about counting semaphore.	K3	3	6M
	OR				
	b	i) Write in detail about Memory Allocation methods.	K4	3	6M
ii) Discuss about structure of page table.		K4	3	6M	
4	Unit-IV				
	a	i) Explain about LRU page replacement algorithm with an example?	K4	4	6M
		ii) Discuss about demand paging?	K3	4	6M
	OR				
	b	i) Define Deadlock? Explain the necessary conditions of deadlock.	K4	4	6M
ii) Explain the importance of Bankers algorithm in defining a systems safe state.		K4	4	6M	
5	Unit-V				
	a	i) Describe the free space management techniques?	K2	5	6M
		ii) What is meant by Protection? Explain about Access Matrix.	K2	5	6M
	OR				
	b	i) Explain the various disk scheduling algorithms with an examples.	K2	5	6M
ii) Discuss about tree structured directories?		K4	5	6M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks



III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCI5TH02

COMPILER DESIGN

Time: 3 hours

(CSE)

Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	Describe the phases of a compiler and show the transformation that takes after each phase in translating the statement: $S=(a+b+c)/2$. Assume that all variables are double	L1	1	6M
		Write regular expressions & FA for the following informally described languages: All strings of a's and b's with the subsequence abb. All strings of a's and b's with an even number of a's and an odd number of b's..	L1	1	6M
	OR				
	b	i) Describe the phases of a compiler and show the transformation that takes after each phase in translating the statement: $X=25+(b+c/d*e)/(f*g-h*i)$ Assume that all variables are double ii) Show that following grammar in not LL(1) $S \rightarrow iEtSS^1/a$ $S^1 \rightarrow eS/\epsilon$ $E \rightarrow b$	L1	1	6M
2	Unit-II				
	a	i) Explain the procedure for eliminating ambiguity and eliminating left recursion from a grammar. Give an example.	L2	2	6M
		ii) Compute FIRST and FOLLOW for the grammar: $E \rightarrow TE', E' \rightarrow +TE'/\epsilon, T \rightarrow FT', T' \rightarrow *FT'/\epsilon, F \rightarrow (E) id$	L2	2	
	OR				
	b	i) Explain the role of parser. Discuss different kinds of errors and error recovery strategies. ii) Consider the grammar $E \rightarrow E + T E - T T, T \rightarrow T * F T / F F, F \rightarrow (E) id$ Show the sequence of moves made by shift reduce parser for the input string $id1+id2*id3$ is accepted or not.	L2	2	6M
3	Unit-III				
	a	i) Consider the grammar and construct SLR Parsing Table. $S \rightarrow X$ $X \rightarrow Yb aa$ $Y \rightarrow a bYa$	L4	3	6M
		Construct canonical LR(1) items for the grammar $S \rightarrow BB, B \rightarrow aB b$	L4	3	6M
	OR				
	b	Discuss the procedure for construction of SLR parsing table with an example Construct LALR parsing table for the given grammar. $S \rightarrow BB, B \rightarrow aB b$	L4	3	6M

Unit-IV					
4	a	i) Write the quadruples ,triples and indirect triples for the expression $-(a+b)*(c+d)-(a+b+c)$	L3	4	6M
		ii) Describe how three address statements can be represented as records with fields for the operator and operands in compilers.	L3	4	6M
	OR				
	b	i) Discuss syntax directed definition by defining synthesized and inherited attributes.	L3	4	6M
ii) Generate three address code for “if A<B then 1 else 0”, using numerical method.		L3	4	6M	
Unit-V					
5	a	i) What are the principles associated with designing calling sequences and the layout of activation records?	L4	5	6M
		ii) Explain peep-hole optimization and loop optimization.	L4	5	6M
	OR				
	b	i) How to access non-local data? Explain implication details with example.	L4	5	6M
ii) Discuss Semantics-Preserving Transformations.		L4	5	6M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M:Marks

III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCC50E10

OOPS THROUGH JAVA

Time: 3 hours

(ME)

Max. Marks: 60

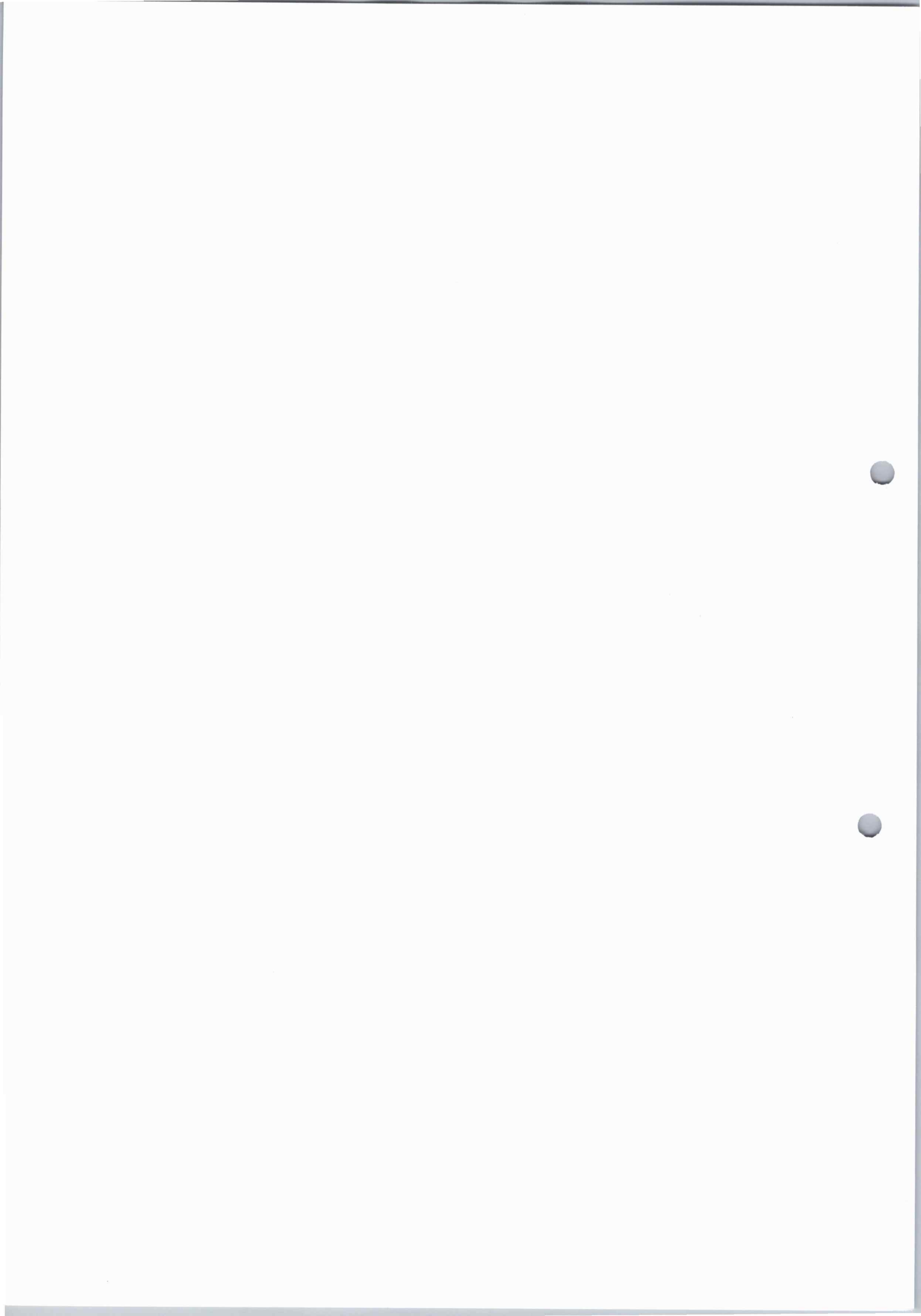
Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
Unit-I					
1	a	i) Explain about JAVA Buzz words.	2	2	6M
		ii) Write and explain the Java program structure.	1	2	6M
	OR				
	b	i) Explain about OOP features in detail.	2	1	6M
	ii) Differentiate between Object Oriented Programming and Procedure oriented Programming.	4	1	6M	
Unit-II					
2	a	i) Explain in detail about data types in Java Programming language.	2	2	6M
		ii) Write a Java program to print first n Fibonacci numbers.	5	2	6M
	OR				
	b	i) Define constructor? Explain about constructor overloading with an example.	2	2	6M
	ii) Write a java program to find whether the given string is palindrome or not.	5	2	6M	
Unit-III					
3	a	i) Write and Explain different types of Inheritance with an example program.	2	3	6M
		ii) Define Abstract class and distinguish between Abstract class and interface.	4	3	6M
	OR				
	b	i) Differentiate between method overloading and method overriding with suitable examples.	4	3	6M
	ii) What is package? Write and explain the procedure used in user defined package creation.	1	3	6M	
Unit-IV					
4	a	i) How to use nested try and finally block? Explain the usage of finally block with an example.	2	3	6M
		ii) Explain the label AWT control with an example	2	4	6M
	OR				
	b	i) What is the difference between throws and throw? Explain with an example program.	4	3	6M
	ii) Discuss about scroll pane AWT control with an example	2	4	6M	
Unit-V					
5	a	i) What are the steps Involved in Event Handling? Explain it with an example program.	2	4	6M
		ii) Explain Delegation event model.	2	4	6M
	OR				
	b	i) How to handle Mouse Events? Explain with a suitable example.	2	4	6M
	ii) Define and briefly explain events, event sources, event listeners	2	4	6M	

KL: Blooms Taxonomy Knowledge Level

CO: Course Outcome M: Marks



III B.Tech I Semester Supple. Examinations, October-2023

Sub Code: 19BCC50E08

CONSUMER ELECTRONICS

Time: 3 hours

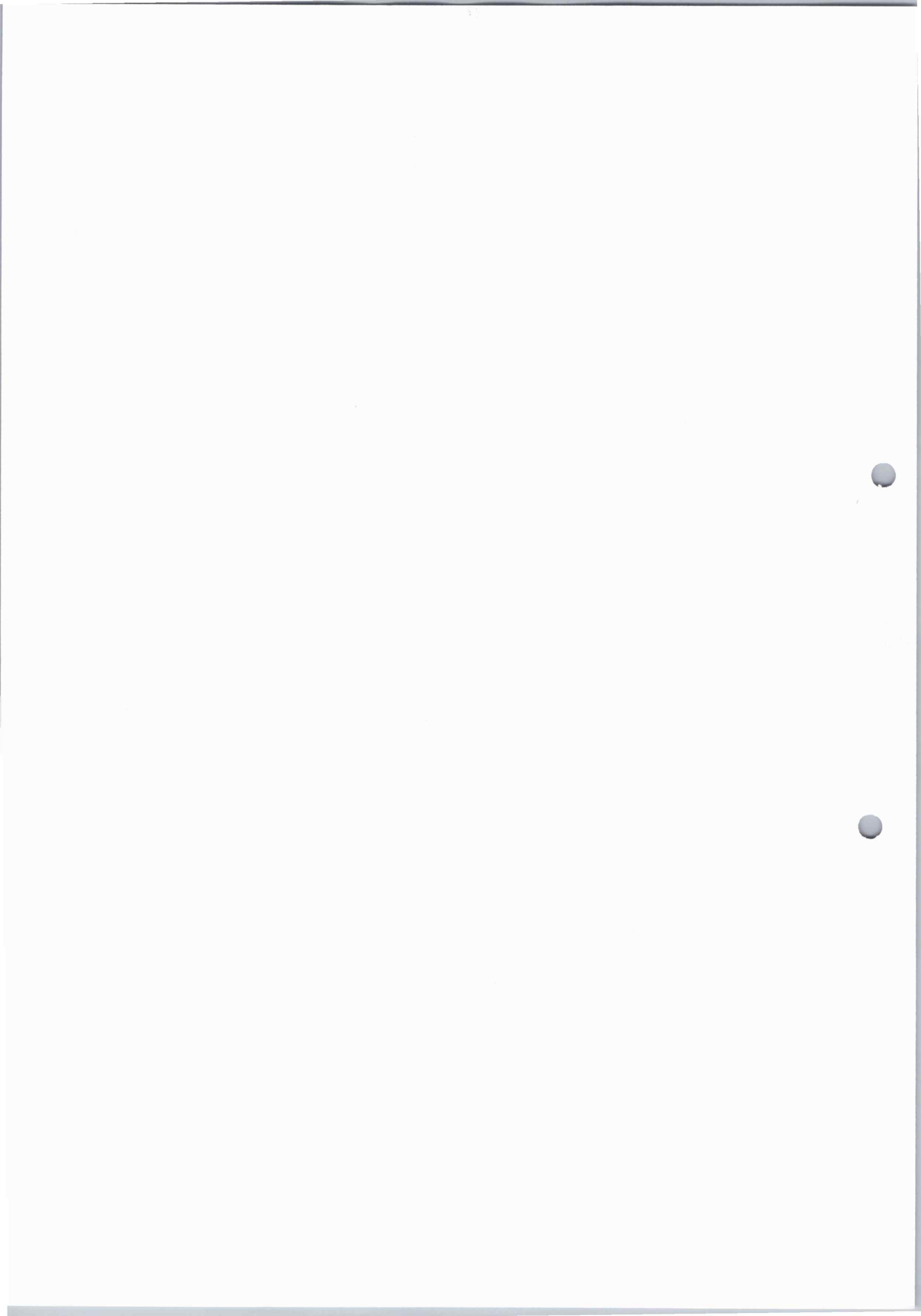
(ECE)

Max. Marks: 60

Note: Answer All FIVE Questions.
All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
Unit-I					
1	a	i) Explain about any three characteristics of Microphones.	K2	1	6M
		ii) Describe about Crystal Microphone and Moving coil Microphones.	K3	1	6M
	OR				
	b	i) Discuss the Crystal loud speakers and Electrostatic loudspeakers.	K2	1	6M
ii) Explain in brief about moving iron headphones and Dynamic headphones.		K2	1	6M	
Unit-II					
2	a	i) Discuss the sound reverberation and sound Absorption	K2	2	6M
		ii) Describe about the Gramophone disc recording.	K3	2	6M
	OR				
	b	i) Explain in detail about Public Addressing system.	K2	2	12M
Unit-III					
3	a	i) Distinguish between Horizontal scanning and Vertical scanning.	K4	3	6M
		ii) Explain in brief about the Camera tube characteristics.	K2	3	6M
	OR				
	b	i) Discuss in brief the Monochrome picture tube.	K2	3	6M
ii) Describe about Colour signal transmission and reception.		K3	3	6M	
Unit-IV					
4	a	i) Discuss the common service controls of Monochrome TV receivers.	K2	4	6M
		ii) Outline briefly about the Remote controls.	K2	4	6M
	OR				
b	Describe in detail about the DTH TV.	K3	4	12M	
Unit-V					
5	a	i) Describe briefly about Refrigerator.	K3	5	6M
		ii) Explain the working of digital clock.	K2	5	6M
	OR				
	b	i) Explain the working of Calculator.	K2	5	6M
ii) Write a short note on Air conditioner.		K1	5	6M	

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks



III B.Tech I Semester Supple Examinations, October-2023

Sub Code: 19BCI5TH06 DATA WAREHOUSING AND DATA MINING

Time: 3 hours

(CSE,IT)

Max. Marks: 60

Note: Answer All FIVE Questions. All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No	Questions	KL	CO	M	
1	Unit-I				
	a	i) What is data mining? Briefly explain the Knowledge discovery process.	KL2	CO1	6M
		ii) What is data set? Describe different characteristics and types of data sets used in data mining.	KL2	CO1	6M
	OR				
	b	i) Briefly explain the challenges and applications of data mining.	KL2	CO1	6M
		ii) Explain about various Data Mining Tasks with appropriate examples.	KL2	CO1	6M
2	Unit-II				
	a	i) Write a note on subset selection in attributes for data reduction.	KL2	CO2	6M
		ii) Explain the measures of similarity and dissimilarity.	KL2	CO2	6M
	OR				
	b	i) What is the need of dimensionality reduction? Explain any two techniques for dimensionality reduction.	KL2	CO2	6M
		ii) What is data normalization? Explain any two normalization methods.	KL2	CO2	6M
3	Unit-III				
	a	i) Describe various OLAP operations performed on Multidimensional Data Model	KL2	CO3	6M
		ii) Describe the architecture of Data Warehouse with a neat sketch.	KL2	CO3	6M
	OR				
	b	i) Design Fact constellation table with suitable example.	KL2	CO3	6M
		ii) Differentiate ROLAP, MOLAP and HOLAP server functionalities.	KL2	CO3	6M
4	Unit-IV				
	a	i) State Bayes theorem and discuss how Bayesian classifiers work?	KL2	CO4	6M
		ii) What are over fitted models? Explain their effects on performance.	KL2	CO4	6M
	OR				
	b	i) What is Decision tree? With an example, briefly describe the algorithm for generating decision tree.	KL2	CO4	6M
		ii) Describe the criteria used to evaluate classification and prediction methods.	KL2	CO4	6M

Unit-V																								
a	i) What is Association rule mining? Briefly describe the criteria for classifying association rules	KL2	CO5	6M																				
	ii) Briefly explain K-means clustering algorithm.	KL2	CO5	6M																				
OR																								
5	b	<p>Make a comparison of Apriori and FP-Growth algorithms for frequent item set mining in transactional databases. Apply these algorithms to the following data.</p> <table border="0"> <thead> <tr> <th style="text-align: left;">TID</th> <th style="text-align: left;">LIST OF ITEMS</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Bread, Milk, Sugar, TeaPowder, Cheese, Tomato</td> </tr> <tr> <td>2</td> <td>Onion, Tomato, Chillies, Sugar, Milk</td> </tr> <tr> <td>3</td> <td>Milk, Cake, Biscuits, Cheese, Onion</td> </tr> <tr> <td>4</td> <td>Chillies, Potato, Milk, Cake, Sugar, Bread</td> </tr> <tr> <td>5</td> <td>Bread, Jam, Mik, Butter, Chilles</td> </tr> <tr> <td>6</td> <td>Butter, Cheese, Paneer, Curd, Milk, Biscuits</td> </tr> <tr> <td>7</td> <td>Onion, Paneer, Chilies, Garlic, Milk</td> </tr> <tr> <td>8</td> <td>Bread, Jam, Cake, Biscuits, Tomato</td> </tr> </tbody> </table>		TID	LIST OF ITEMS	1	Bread, Milk, Sugar, TeaPowder, Cheese, Tomato	2	Onion, Tomato, Chillies, Sugar, Milk	3	Milk, Cake, Biscuits, Cheese, Onion	4	Chillies, Potato, Milk, Cake, Sugar, Bread	5	Bread, Jam, Mik, Butter, Chilles	6	Butter, Cheese, Paneer, Curd, Milk, Biscuits	7	Onion, Paneer, Chilies, Garlic, Milk	8	Bread, Jam, Cake, Biscuits, Tomato	KL3	CO5	12M
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KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M: Marks
