Q.P. Code: 2001601

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Environmental Engineering (CE)

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

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Explain about the components of water supply scheme with the help of diagrams?	6M	CO1	L2
	(b)	What are water borne diseases and how to maintain water quality standards?	6M	CO1	L2
		(OR)			
2.	(a)	A water supply scheme has to be designed for a city having a population of 1,00,000. Estimate the important kinds of drafts which may be required to be recorded for an average Water consumption of 250 Lpcd. Also record the required capacities of the major components of the proposed water works system for the city using a river as the source of supply?	6M	CO1	L5
	(b)	Explain about the physical water parameters and how to determine them?	6M	CO1	L3
		UNIT – II			
3.	(a)	Write a short note on chlorine demand and breakpoint chlorination	6M	CO2	L2
	(b)	The Maximum daily demand at a water purification plant has been estimated as 10 MLD. Design the dimensions of a suitable sedimentation tank (fitted with mechanical sludge removal arrangements) for the raw supplies, assuming a detention period of 6 hours and the velocity of flow as 10 cm per minute.	6M	CO2	L6
		(OR)			
4.	(a)	Compare and contrast slow and rapid sand filters?	6M	CO2	L3
	(b)	What is the necessity of aeration and what methods are available to achieving the same?	6M	CO2	L4
		UNIT – III			
5.	(a)	Explain procedure of pipe design using Hardy Cross method?	6M	CO3	L2
	(b)	Define the terms sewage, Sullage and sludge?	6M	CO3	L1
		(OR)			
6.	(a)	How domestic waste is detected and prevention measures?	6M	CO3	L3
	(b)	Explain terms average, peak and minimum sewage flows?	6M	CO3	L2
		UNIT – IV			
7.	(a)	Design the section of combined circular sewer for full flow from the given data below : Area to be served = 140 Hectares, population of the locality = 80000, Minimum permissible velocity = 3.2 m/sec, Time of entry = 5 Mins, Impermissibility factor is 0.48, Assume that 80% of water supplied converts into sewage.	6M	CO4	L6
	(b)	Explain briefly about the Chemical Composition of Sewage ?	6M	CO4	L2
		(OR)			
8.	(a)	Derive equation for BOD?	6M	CO4	L2
	(b)	Describe the method of sewer design procedure?	6M	CO4	L2
		UNIT-V			
9.	(a)	Describe construction and working of oxidation pond	6M	CO5	L2
	(b)	How can we remove nitrogen and phosphorous from sewage	6M	CO5	L3
		(OR)			
10.	(a)	State the principle of septic tank and outline the sludge disposal methods available in India	6M	CO5	L2
	(b)	What is meant by septic tank? Show the different methods of dispersion trenches in septic tank.	6M	CO5	L3

Q.P. Code: 2001602

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Water Resources Engineering (CE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Describe various types of spillways with neat sketches	6M	CO1	L2
	(b)	Discuss salient features of chute and tunnel spillways with neat sketches	6M	CO1	L2
		(OR)			
2.		Explain various types of spillway gates with neat sketches	12M	CO1	L2
		UNIT – II			
3.	(a)	Describe trapezoidal notch fall and straight glacis fall	6M	CO2	L2
	(b)	Discuss various criteria for locating a fall	6M	CO2	L1
		(OR)			
4.		Explain various design principles of Sarda type fall	12M	CO2	L3
		UNIT – III			
5.	(a)	Discuss various types of canal regulation works	6M	CO3	L1
	(b)	Explain different canal outlets with an example for each type.	6M	CO3	L2
		(OR)			
6.	(a)	Explain the following terms related to outlet (i) Proportionality (ii) Sensitivity (iii) Flexibility	6M	CO3	L2
	(b)	Describe working of Kennedy's gauge outlet with a neat sketch	6M	CO3	L3
		UNIT – IV			
7.		Discuss various types of cross drainage works with neat sketches	12M	CO4	L1
		(OR)			
8.		Describe different criteria for selecting a particular type of CD work	12M	CO4	L2
		UNIT-V			
9.		Explain about water resources in India	12M	CO5	L2
		(OR)			
10.		Discuss various strategies for future water use	12M	CO5	L2

Q.P. Code: 2001603 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Design of Reinforced Concrete Structures (CE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Differentiate between limit state and working stress method.	6M	CO1	L2
	(b)	Differentiate the under reinforced, balanced and over reinforced sections and mention them with neat sketch.	6M	CO1	L2
		(OR)			
2.	(a)	Classify whether RC beam under reinforced, balanced or over reinforced section of size 250 mmX 500mm deep, reinforced with 5 bars of 20 mm diameter with an effective cover of 40mm.Use M20 Grade concrete and Fe415 Grade of steel.	6M	CO1	L3
	(b)	Discuss about the partial safety factors recommended by IS 456:2000 with regard to loads and material strength.	6M	CO1	L3
		UNIT – II			
3.	(a)	Calculate the area of Reinforcement required for a single reinforced simply supported reinforced concrete beam 250 mm width and 400 mm effective depth to resist ultimate moment of 40kN-m.Use M20 Grade concrete and Fe415 Grade of steel.	6M	CO2	L3
	(b)	For a singly reinforced rectangular section, derive the stress block parameters.	6M	CO2	L3
		(OR)			
4.		Calculate the tensile and compressive Reinforcement required for a rectangular simply supported beam 250 mm width and 500 mm deep. The super imposed load is 35 KN/m over the effective span of 3.5m. Provide effective cover of 50 mm on both sides. Use M20 Grade Concrete and Fe415 Grade of steel.	12M	CO2	L3
		UNIT – III			
5.		Design a reinforced concrete slab for a room of clear dimensions 5.5 m X 4 m. the slab is supported all around on walls of width 250 mm. The slab has to carry a live load of 8 kN/m^2. Use M20 Concrete and Fe 415 steel. Assume corners are held down.	12M	CO3	L4
		(OR)			
6.		Design a dog legged staircase for a residential building hall measuring 2.2 m x 4.7 m. The width of the landing is 1m. The distance between floors to floor is 3.3 m. The rise and tread may be taken as 150mm and 250mm respectively. The weight of floor finish is 0.75 kN/m^2, width of stair is 1 m, width of rail is 0.1 m, and Number of risers in each flight is 10. The materials used are M20 grade concrete and Fe415 grade steel. Sketch the details of steel. Here flight and the landing slabs spans in the same direction i.e., Flight spans longitudinally. Assume the data if necessary and for mild exposure.	12M	CO3	L4
		UNIT – IV			
7.		A short column 300mmX600mm has an unsupported length of 3m. It is subjected to a factored axial load of 970 kN and a factored moment of 300 kN-m about the major axis. Determine the longitudinal steel using M25 grade concrete and Fe 415 grade steel. Assume effective cover = 40mm.	12M	CO4	L4
		(OR)			
8.		Design a Rectangular column of size 500mmX400mm carry an axial factored load of 1260 kN and factored moment M_{ux}=100 kN-m & M_{uy}=80 kN-m, the materials are M20 Grade and Fe 415.	12M	CO4	L4
		UNIT-V			
9.		Describe the various types of foundations with neat sketches.	12M	CO5	L3
		(OR)			
10.		Design RCC isolated footing for 300mmX300mm column size which carries load of 1100kN on the column, take Soil bearing capacity of soil (SBC) is 160kN/m^2. Assume M20 grade concrete and Fe 415 grade steel.	12M	CO5	L4

Q.P. Code: 2001604 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Pre-stressed Concrete Structures (CE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	List the advantages of prestressed concrete members.	6M	CO1	L2
	(b)	Explain the necessity of high strength steel and concrete in PSC members.	6M	CO1	L2
		(OR)			
2.	(a)	Explain Magnel-Blaton's system of prestressing?	6M	CO1	L2
	(b)	Explain the Hoyers system of prestressing, with neat sketches	6M	CO1	L2
		UNIT – II			
3.	(a)	Explain any two factors influencing the loss of prestress in post-tensioned beam?	4M	CO2	L2
	(b)	A pretensioned beam, 200mm wide and 300mm deep, is prestressed by 10 wires of 7 mm diameter initially stressed to 1200 MPa, with their centroids located 100mm from the soffit. Find the maximum stress in concrete immediately after transfer, allowing only for elastic shortening of concrete. If the concrete undergoes a further shortening due to creep and shrinkage while there is a relaxation of 5 percent of steel stress, estimate the final percentage loss of stress in the wires using the IS 1343-1800 regulations, and the following data: E_s = 210 KN/ mm^2, $E_c = 5700(f_{cu})^{1/2}$, f_{cu}= 42 MPa, ϕ = 1.6, Total residual shrinkage strain = 3 X 10^4	8M	CO2	L3
		(OR)			
4.	(a)	Explain loss of prestress due to shrinkage of concrete	4M	CO2	L2
	(b)	A post tensioned concrete beam of rectangular section 150mm wide and 300mm deep, is stressed by a parabolic curve with zero eccentricity at the supports and an eccentricity of 50 mm at the centre of span. The area of cable is 250 mm^2 and initial stress in the cable is 1200 MPa. If the ultimate creep strain is 30 x 10^{-6} mm/mm per MPa of stress and Es = 210 kN/mm^2. Compute the loss of stress in steel only due to creep of concrete	8M	CO2	L3
		UNIT – III			
5.	(a)	Explain with sketches about resultant stresses at a PSC section.	4M	CO3	L2
	(b)	An unsymmetrical I section of a PSC beam supports an UDL of 20 KN/m over a span of 8m. it has a top flange of 300mm×60mm, a bottom flange of 100mm×60mm and a web of 80×280mm. if the effective pre-stressing force of 100KN is located at 50mm from bottom of the beam at mid span section, find the stresses developed in the mid span section of the beam.	8M	CO3	L3
		(OR)			
6.	(a)	What are the assumptions made in the analysis of PSC structures.	4M	CO3	L2
	(b)	Design a prestressed concrete beam to the following requirements: Span = 15m, Superimposed Load – 34 kN/m, Cube strength of Concrete at 28 days = 35 MPa, Safe stress in concrete at transfer of prestress, $f_r = 0.5f_{ck}$, Safe stress in concrete due to final prestress, $f_c = 0.4f_{ck}$, Total loss of prestress = 20%, Allowable tensile stress in concrete = 0.219 $\sqrt{f_{ck}}$, Ultimate stress in steel = 1500 MPa, Safe Stress in steel = 60% of ultimate stress.	8M	CO3	L3

UNIT – IV

7.	(a)	Explain the concept of shear and principal stresses with neat sketch.	4M	CO4	L2
	(b)	A prestressed concrete beam of rectangular section has 10m span, 120mm wide and 300 mm deep, is axially prestressed by a cable carrying an effective force of 180 kN. The beam supports a total udl of 5 kN/m which includes the self–weight of the member. Compare the magnitude of the principal tension developed in the beam with and without the axial prestress.	8M	CO4	L3

(OR)

8.	(a)	Explain how does prestressing increase the shear strength of beams.	4M	CO4	L2
	(b)	A triple T-section having a flange of 2000 x 150 mm and thickness of web 160 mm and has an overall depth of 1900 mm. Effective span = 40 m. The beam is prestressed by cables which are concentric at supports and have an eccentricity of 750mm at the center of the span with parabolic profile. The force in the cable is 13000 kN at transfer. Characteristic strength of concrete is 60MPa. Estimate the ultimate shear resistance of support section. If the ultimate shear force at support due to loads is 3000 kN and a loss ratio=0.81. Design the suitable reinforcement using Fe415.	8M	CO4	L3

UNIT-V

9.	(a)	Discuss briefly about the factors influencing deflections.	4M	CO5	L2
	(b)	A Concrete beam having a rectangular section 100mm wide and 300 mm deep is prestressed by a parabolic cable carrying an initial force of 240 kN. The cable has an eccentricity of 50 mm at the centre of span and is concentric at the supports. If the span of the beam is 10m and the live load is 2 kN/m, estimate the short term deflection at the centre of span. Assuming E = 38kN/mm^2 and creep coefficient, ϕ = 2.0, loss of prestress = 20 % of the initial stress after 6 months. Estimate the long time deflection at the centre of span at this stage, assuming that the dead and live loads are simultaneously applied after the release of prestress.	8M	CO5	L3

(OR)

10.	(a)	Explain how do you estimate the short term and long term deflection in PSC beam.	4M	CO5	L2
	(b)	A PSC beam of rectangular section is 125mm wide and 250mm deep and has a span of 6m. Beam is provided with a straight tendon at a uniform eccentricity of 40mm the pre-stressing force being 190KN. Find the deflection at the centre, under the action of pre-stress and dead load of the beam. Under the action of pre-stress, dead load and live load of 3.75 KN/m and including effect of creep and shrinkage, taking creep coefficient as 1.75.	8M	CO5	L3

Q.P. Code: 2002601 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Microprocessors & Microcontrollers (EEE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.		Deduce the functional description of 8085 Microprocessor with neat diagram.	12M	CO2	L5
		(OR)			
2.	(a)	Describe in detail about memory interfacing using 8086.	6M	CO2	L1
	(b)	Draw and explain the flag register of 8086 in brief.	6M	CO2	L1
		UNIT – II			
3.	(a)	Write an ALP to find factorial of number for 8086.	6M	CO3	L1
	(b)	Discuss the data movement and program control instruction of 8086	6M	CO3	L1
		(OR)			
4.	(a)	Write 8086 ALP to transfer the block of data to new location B001H to B008H	6M	CO3	L1
	(b)	Describe how memory is accessed in 8086 with suitable examples	6M	CO3	L1
		UNIT – III			
5.	(a)	With neat diagram explain the 8255 Programmable peripheral interface and its operating modes	6M	CO3	L3
	(b)	Explain the Programmable Communication Interface (8251 USART) and its interfacing with neat diagram	6M	CO3	L3
		(OR)			
6.	(a)	Describe the Programmable Interval Timer (8254) and its interfacing,	6M	CO4	L2
	(b)	Illustrate the Programmable DMA controller (8257) and its interfacing	6M	CO4	L1
		UNIT – IV			
7.		Explain in detail about the pin diagram of 8051 microcontroller	12M	CO4	L4
		(OR)			
8.	(a)	Explain the I/O ports and their functions of 8051 microcontroller.	6M	CO5	L4
	(b)	Illustrate the different modes with which the timer/counter in 8051 can be programmed.	6M	CO5	L3
		UNIT-V			
9.	(a)	What are the different features of ARM instruction set that make it suitable for embedded applications.	6M	CO5	L2
	(b)	Differentiate ARM and Thumb instruction set features.	6M	CO5	L1
		(OR)			
10.	(a)	With a neat diagram explain the different hardware components of an embedded device based on ARM core.	6M	CO5	L4
	(b)	Explain ARM core dataflow model with a neat diagram.	6M	CO5	L4

Q.P. Code: 2002602 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Fundamentals of Electric Drives (EEE)

Time: 3 Hours | Max. Marks: 60

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	From the fundamentals, derive the torque equation of Electric drives	6M	CO1	L1
	(b)	What are various components of load torques in detail	6M	CO1	L2
		(OR)			
2.	(a)	Explain about multi quadrant operation of drive by considering hoist application in detail	6M	CO1	L2
	(b)	Derive the toque equation by considering load with rotational motion	6M	CO1	L4
		UNIT – II			
3.	(a)	Explain the operation of drive with acceleration including starting and deceleration including stopping.	6M	CO2	L2
	(b)	Explain the significance of plugging and regenerative braking methods in detail	6M	CO2	L3
		(OR)			
4.		Explain the operation of single phase fully controlled rectifier control of separately excited DC motor drive with discontinuous and continuous conduction mode with relevant waveforms.	12M	CO2	L2
		UNIT – III			
5.	(a)	Explain the speed torque characteristics of induction motor drive when controlled by 3 phase inverter with variable voltage and variable frequency control.	6M	CO3	L2
	(b)	Explain the principle of static rotor resistance control.	6M	CO3	L1
		(OR)			
6.	(a)	Explain the speed torque characteristics of induction motor drive when controlled by AC Voltage controller with relevant waveforms.	6M	CO3	L3
	(b)	Estimate the performance of the 3 phase induction motor when controlled from static Kramer drive scheme.	6M	CO3	L5
		UNIT – IV			
7.	(a)	Explain the in detail about load commutated fed thyristor controlled synchronous motor drive.	6M	CO4	L2
	(b)	Compare the controlling mechanism of synchronous motor drive fed from inverter control and cycloconverter control	6M	CO4	L3
		(OR)			
8.	(a)	Derive the torque expression of cylindrical rotor wound field synchronous motor drive.	6M	CO4	L4
	(b)	Brief about BLDC motor drive for servo applications.	6M	CO4	L2
		UNIT-V			
9.	(a)	Explain various losses in electric drive system in detail	6M	CO5	L2
	(b)	Explain the use of efficient converters for energy conservation in electrical drives.	6M	CO5	L3
		(OR)			
10.	(a)	Explain about the energy efficient operation of drives.	6M	CO5	L2
	(b)	Explain the significance of improvement of power factor for energy conservation in electrical drives.	6M	CO5	L4

Q.P. Code: 2002603 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Switch Gear & Protection (EEE)

Time: 3 Hours | Max. Marks: 60

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	What are protective measures taken against lightning over voltages?	6M	CO1	L1
	(b)	Describe the phenomenon of lightning and explain the terms pilot streamer, stepped leader, return streamer, dart leader, cold lightning stroke and hot lightning stroke.	6M	CO1	L2
		(OR)			
2.	(a)	Describe the construction and principle of operation of Valve type lightning arrester?	6M	CO1	L1
	(b)	Discuss and compare the various methods of neutral earthing.	6M	CO1	L2
		UNIT – II			
3.	(a)	Derive an expression for re-striking voltage, maximum value of re-striking Voltage and RRRV.	6M	CO2	L3
	(b)	Explain the phenomena of current chopping in a circuit breaker. What measures are taken to reduce it?	6M	CO2	L2
		(OR)			
4.	(a)	What is the function of an explosion pot in an oil circuit breaker? What are the different types of explosion pot? Explain in brief.	6M	CO2	L2
	(b)	Discuss the properties of SF6 which make it most suitable to be used in circuit breakers.	6M	CO2	L2
		UNIT – III			
5.	(a)	What is protective relay? Discuss the basic requirements of relay.	6M	CO3	L1
	(b)	What are the merits of induction cup construction over the induction disc construction?	6M	CO3	L1
		(OR)			
6.	(a)	Explain the principle of directional over current relay with neat diagram?	6M	CO3	L2
	(b)	Discuss how an amplitude comparator can be converted to a phase comparator and vice versa.	6M	CO3	L2
		UNIT – IV			
7.	(a)	Explain the procedure to protect the generator against stator faults.	6M	CO4	L2
	(b)	Discuss the protection employed against loss of excitation of a generator.	6M	CO4	L2
		(OR)			
8.	(a)	Explain internal faults inside the transformer.	6M	CO4	L2
	(b)	A three phase transformer of 220/11,000 line volts is connected in star-delta and the protective transformers on 220 v side have a current ratio of 600/5. Determine the ratio of the current transformer on the HV side.	6M	CO4	L3
		UNIT-V			
9.	(a)	Elaborate on various methods for protection of feeders.	6M	CO5	L2
	(b)	With a neat sketch discuss the differential scheme for bus-zone protection.	6M	CO5	L2
		(OR)			
10.	(a)	What are requirements of protection of lines, what is the importance of bus-bar protection?	6M	CO5	L1
	(b)	Explain the carrier current protection scheme for transmission lines.	6M	CO5	L2

Q.P. Code: 2002604

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Power System Operation & Control (EEE)

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

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Write a short note on (i) Critical clearing time (ii) Critical clearing angle	6M	CO1	L1
	(b)	Elaborate equal area criterion subjected to sudden increase in input?	6M	CO1	L6
		(OR)			
2.		Derive the power flow equations of salient pole synchronous machine connected to an infinite bus through a transmission system?	12M	CO1	L5
		UNIT – II			
3.	(a)	Explain the significance of equality and inequality constraints in the economic allocation of generation among different plants in the system?	8M	CO2	L2
	(b)	Discuss and define the loss formula coefficients?	4M	CO2	L6
		(OR)			
4.	(a)	Write a short note on: (i) Input -output characteristics (ii) Heat curve (iii) Cost curve	6M	CO2	L1
	(b)	A power system consists of two, 125 MW units whose input cost data are represented by equations: $C1=0.04\ p_1^2+22\ p_1+800$ rs/hr, $C2= 0.045p_2^2+15p_2+1000$ rs/hr If total received power PR=200MW. Determine the load division between units for most economic operation?	6M	CO2	L5
		UNIT – III			
5.		Derive the model of speed governing system and represent it by a block diagram?	12M	CO3	L5
		(OR)			
6.	(a)	What is scheduling problem?	4M	CO3	L1
	(b)	Elaborate scheduling problem with two-unit hydrothermal system and necessary equations?	8M	CO3	L6
		UNIT – IV			
7.	(a)	Explain the necessity of maintaining a constant frequency in power system operation?	6M	CO4	L2
	(b)	A 100 MW generator with R=0.02 hz/MW has its frequency fallen by 0.1hz, if the turbine power remains unchanged. By how much the reference power setting be changed?	6M	CO4	L1
		(OR)			
8.	(a)	Explain the representation of an isolated power system using block diagram?	6M	CO4	L2
	(b)	Two generators with ratings 100MW and 300MW operate at 50 Hz frequency. The system load increases by 1009MW when both the generators are operating at about half of their capacity. The frequency the falls to 49.5 Hz. If the generators are to share the increades load in proportion to their ratings. What should be the individual regulations?	6M	CO4	L3
		UNIT-V			
9.	(a)	Explain PI control of two area with its block diagram?	6M	CO5	L2
	(b)	Two interconnected areas 1 & 2 have the capacity of 1000 MW and 500 MW respectively. The incremental regulation and damping torque coefficient for each area on its base are 0.1 pu, 1.0 pu respectively. Find the steady state change in system frequency from a nominal frequency of 50Hz and the change in steady state tie-line power following a 50 MW change in load of area 1	6M	CO5	L4
		(OR)			
10.		Derive mathematical model of load frequency control of two area system?	12M	CO5	L6

Q.P. Code: 2003601 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Operations Research (ME)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

		M	CO	BL

UNIT - I

1. Old hens can be bought for Rs.2.00 each but young one's costs Rs. 5.00 each. The old hens lay 3 eggs per week and the young ones lay 5 eggs per week. Each egg costs Rs. 0.30. A hen costs Rs.1.00 per week to feed. If the financial constraint is to spend Rs.80.00 per week for hens and the capacity constraint is that total number of hens cannot exceed 20 hens and the objective is to earn a profit more than Rs.6.00 per week, find the optimal combination of hens. — 12M CO1 L2

(OR)

2. Solve the following LPP — 12M CO1 L3
Maximize $Z = X_1+3X_2$,
Subjected to: $X_1 + 0X_2 \leq 5$, $X_1 + 2X_2 \leq 10$, $X_2 \leq 4$ and $X_1, X_2 \geq 0$

UNIT – II

3. A company has four machines of which to do three jobs. Each job can be assigned to one and only one machine. The cost of each job on each machine is given in the following Table. Find optimal assignment. — 12M CO2 L2

Job\ Machine	W	X	Y	Z
A	18	24	28	32
B	8	13	17	18
C	10	15	19	22

(OR)

4. A furniture company has plants in cities A, B and C which ship to four demand locations1, 2, 3, 4 with transporting costs (in hundred rupees) as shown below. Determine minimum transportation cost using i) NWC ii) LCM iii) VAM — 12M CO2 L6

Supply Plants	Demand				Capacity
	1	2	3	4	
A	3	5	7	4	50
B	6	8	5	2	50
C	1	9	7	3	50
Requirement	20		30	40	

UNIT – III

5. There are six jobs each of which must go through five machines A , B,C,D,E, B in the order ABCDE. Processing time in minutes are given below. Determine the sequence for the six jobs which will minimize the elapsed time and idle time — 12M CO3 L6

JOB	Processing Time				
	Machine-A	Machine-B	Machine-C	Machine-D	Machine-E
1	8	3	1	3	8
2	7	4	4	3	6
3	5	1	4	2	3
4	4	3	3	1	5
5	7	2	2	2	8
6	8	1	1	2	6

(OR)

6. Solve the following game, using the Dominance Principle.. **12M CO3 L3**

FirmA	FirmB					
	B1	B2	B3	B4	B5	B6
A1	4	2	0	2	1	1
A2	4	3	1	3	2	2
A3	4	3	7	-5	1	2
A4	4	3	4	-1	2	2
A5	4	3	3	-2	2	2

UNIT – IV

7. Let on the average 96 patients per 24-hour day require the service of an emergency clinic. Also, on average, a patient requires 10 minutes of active attention. Assume that the facilities can handle only one emergency at a time. Suppose that it costs the clinic Rs. 100/- per patient treated to obtain an average servicing time of 10 minutes and that each minute of decrease in this average time would costs Rs. 10/ - per patient treated. How much would have to be budgeted by the clinic to decrease the average size of the queue from one and one third patient to half a patient? **12M CO4 L3**

(OR)

8. The demand for an item is 8000 units per annum and the unit cost is Re.1/-. Inventory carrying charges of 20% of average inventory cost and ordering cost is Rs. 12.50 per order. Calculate optimal order quantity, optimal order time, optimal inventory cost and number of orders. **12M CO4 L4**

UNIT-V

9. A manufacturer, finds from his past records that costs per year associated with a machine with a purchase price of Rs 50,000/-areas given below. Determine the optimum policy **12M CO5 L5**

Year(n)	1	2	3	4	5	6	7	8
Running cost (MC) in Rs.	15000	16000	18000	21000	25000	29000	34000	40000
Scrap value	35000	25000	17000	12000	10000	5000	4000	4000

(OR)

10. A truck owner from his past record s that the maintenance costs per year of a truck whose Purchase price is Rs.8000 are as given below. When should the machine be replaced? **12M CO5 L5**

Year(n)	1	2	3	4	5	6	7	8
Running cost (MC) in Rs.	1000	1300	1700	2000	2900	3800	4800	6000
Resale Price(Rs)	4000	2000	1200	600	500	400	400	400

Q.P. Code: 2003602

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

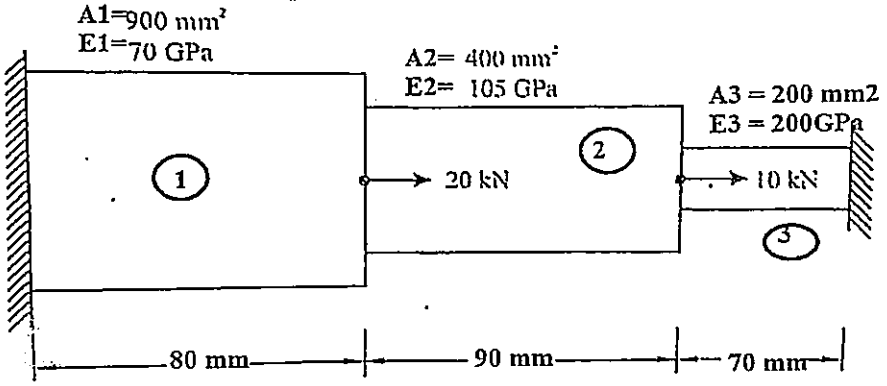
B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Finite Element Methods (ME)

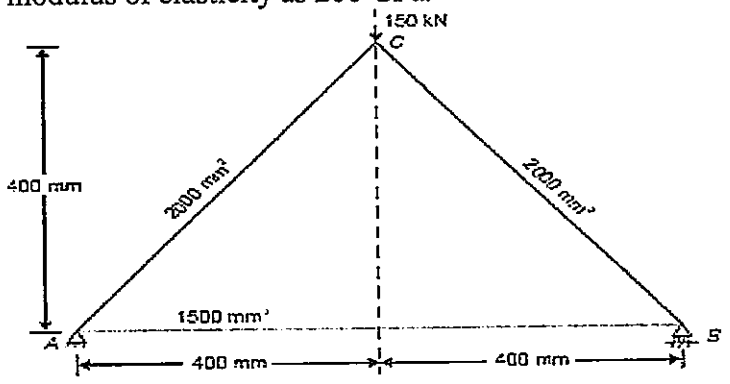
Time: 3 Hours **Max. Marks: 60**

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	List and briefly describe the general steps of the Finite Element Method.	6M	CO1	L1
	(b)	Solve the differential equation for a physical problem expressed as $(d^2y/dx^2)+100 = 0, 0 \le x \le 10$. With boundary conditions as y (0) = 0 and y (10) = 0 using (i) point collocation method, (ii) sub-domain collocation method, (iii) least square method and (iv) Galerkin's method.	6M	CO1	L2
		(OR)			
2.	(a)	Derive shape function and element stiffness matrix for the one dimensional bar element.	6M	CO1	L3
	(b)	A stepped bar is subjected to an axial load of 20kN and 10kN as shown in figure. Find the nodal Displacements.	6M	CO1	L5



		UNIT – II			
3.		For the three – bar truss shown in Figure, determine the nodal displacements and the stress in each member. Find the support reactions also. Take modulus of elasticity as 200 GPa.	12M	CO2	L5

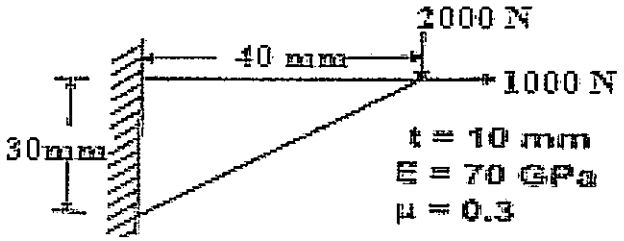


(OR)

4.	A beam of length 12 m, fixed at one end and supported by a roller at the other end carries a 25 kN concentrated load at the centre of the span. By taking the modulus of elasticity of material as 200 GPa and moment of inertia as 24×10^{-6} m^4, determine: 1. Deflection under load 2. Shear force and bending moment at mid span 3. Reactions at supports.	12M	CO2	L5
	UNIT – III			
5.	Derive the stiffness matrix for a three noded triangular CST element starting from shape function.	12M	CO3	L3

(OR)

6. For the two dimensional plate shown in Figure, determine the deflection at the point of load application. **12M CO3 L5**



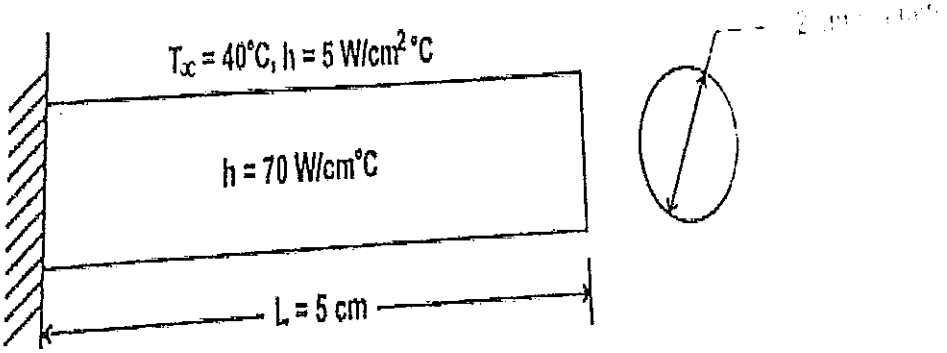
UNIT – IV

7. Use Gaussian quadrature to obtain an exact value of the integral **12M CO4 L5**

$$I = \int_{-1}^{1}\int_{-1}^{-1} (r^3 - 1)\,(s-1)^2\; dr\; ds$$

(OR)

8. Find the temperature distribution in a straight fin of length 5 cm and diameter 2 cm as shown in figure. Thermal conductivity k = 70 W/cm^{0}C, convection heat transfer coefficient h = 10 W/cm^{20}C. Temperature at the root of the fin T_0 = 140^{0}C, surrounding temperature T∞ = 40^{0}C. Assume that the free end of the fin is insulated. (Consider two elements) **12M CO4 L5**



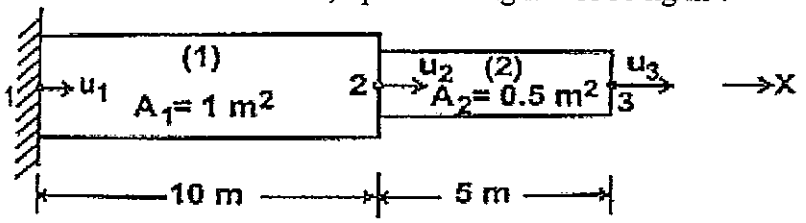
UNIT-V

9. (a) How to solve the equilibrium equation by considering the dynamic terms in the formulation? Explain. **6M CO5 L3**

(b) Derive the consistent mass matrix for one dimensional beam (Transverse vibration of beam) element. **6M CO5 L3**

(OR)

10. Determine the Eigen values and frequencies for the stepped bar shown in figure. Take E = 30 x 10^{10} N/m^2, Specific weight = 8500 kg/m^3. **12M CO5 L5**



Q.P. Code: 2003603 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Introduction to CAD / CAM (ME)

Time: 3 Hours | Max. Marks: 60

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Define CAD. Mention the applications of Computers For Design.	6M	CO1	L1
	(b)	Using a flow chart, describe the general design process followed in computer-aided design.	6M	CO1	L2
		(OR)			
2.	(a)	What database structure is implemented for a graphics modeling?	6M	CO1	L2
	(b)	Explain the following terms: (i) Transformation of geometry (ii) Mathematics of projections	6M	CO1	L5
		UNIT – II			
3.	(a)	Consider the line from (0, 0) to (4, 6). Use DDA algorithm to rasterize this line.	6M	CO2	L3
	(b)	Discuss Brief about the 2D transformations.	6M	CO2	L6
		(OR)			
4.	(a)	Given a square with coordinate points A (0, 3), B (3, 3), C (3, 0), D (0, 0). Apply the translation with distance 1 towards X axis and 1 towards Y axis. Obtain the new coordinates of the square.	6M	CO2	L3
	(b)	What do you mean by Clipping? List main types of Clippings? Explain any one of them using a suitable diagram.	6M	CO2	L2
		UNIT – III			
5.	(a)	Distinguish between wire frame modeling and surface modeling.	6M	CO3	L4
	(b)	Explain the representation of space curves.	6M	CO3	L5
		(OR)			
6.	(a)	Explain about boundary representation (B-rep) approach in solid modeling.	6M	CO3	L5
	(b)	What is Bezier Curve and explain its properties briefly	6M	CO3	L2
		UNIT – IV			
7.	(a)	Discuss the principle and advantages of Group Technology coding.	6M	CO4	L6
	(b)	Briefly explain the nature and role of the elements of CIM system.	6M	CO4	L5
		(OR)			
8.	(a)	Explain the concept of FMS with a typical sketch describing its components.	6M	CO4	L5
	(b)	Recall the applications of material handling equipment's with example.	6M	CO4	L1
		UNIT-V			
9.	(a)	Explain the Generative CAPP type system with neat sketch.	6M	CO5	L5
	(b)	What is MRP? Explain briefly the data requirements of MRP?	6M	CO5	L2
		(OR)			
10.	(a)	Discuss the need and importance of shop-floor data collection systems? What are their functions?	6M	CO5	L6
	(b)	What is automatic identification and data capture? What are the three principal components in automatic identification technologies?	6M	CO5	L2

Q.P. Code: 2003604

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Dynamics of Machinery (ME)

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

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.		A,B,C and D are four masses carried by a rotating shaft at radii 100, 125, 200 and 150 mm respectively. The planes in which the masses revolve are spaced 600 mm apart and the mass of B, C and D are 10, 5 and 4 kg respectively. Find the required mass A and the relative angular setting of the four masses so that the shaft shall be in complete balance.	12M	CO1	L4
		(OR)			
2.		Define balancing of locomotives and list out various partial effects of balancing in locomotives and explain in detail	12M	CO1	L3
		UNIT – II			
3.	(a)	Define the terms Coefficient of fluctuation of energy and Coefficient of fluctuation of speed in the case of fly wheel	6M	CO2	L3
	(b)	Derive the equation for dimensions of the fly wheel rim with neat sketch.	6M	CO2	L3
		(OR)			
4.		A multi-cylinder engine is to run at a speed of 600 r.p.m. On drawing the turning moment diagram to a scale of 1 mm = 250 N-m and 1 mm = 3^0, the areas above and below the mean torque line in mm^2 are: +160,–172,+168,–191,+197,–162. The speed is to be kept within ±1% of the mean speed of the engine. Calculate the necessary moment of inertia of the flywheel. Determine the suitable dimensions of a rectangular flywheel rim if the breadth is twice its thickness. The density of the cast iron is $7250 kg/m^3$ and its hoop stress is 6 MPa. Assume that the rim contributes 92% of the flywheel effect.	12M	CO2	L4
		UNIT – III			
5.	(a)	Classify the governors	4M	CO3	L1
	(b)	Explain watt governor and porter governor in detail with suitable diagram	8M	CO3	L2
		(OR)			
6.		A Hartnell governor having a central sleeve spring and two right angled bell crank levers moves between 290 rpm and 310 rpm for a sleeve lift of 15 mm. The sleeve arms and ball arms are 80 & 120 mm respectively. The levers are pivoted at 120 mm from the governor axis and mass of each ball is 2.5 kg. The ball arms are parallel to the governor axis at the lowest equilibrium speed. Determine 1. Loads on the springs at the two extreme positions 2. Stiffness of the spring.	12M	CO3	L4
		UNIT – IV			
7.		Give an explanation of the various types of absorption dynamometers and a clear description of how they operate.	6M	CO4	L3
		(OR)			
8.	(a)	Explain the effect of gyroscopic couple on a naval ship during steering.	6M	CO4	L3
	(b)	The turbine rotor of a ship has a mass of 3500 kg. It has a radius of gyration of 0.45 m and a speed of 3000 r.p.m. clockwise when looking from stern. Determine the gyroscopic couple and its effect upon the ship: (i) when the ship is steering to the left on a curve of 100 m radius at a speed of 36 km/h. (ii) When the ship is pitching in a simple harmonic motion, the bow falling with its maximum velocity. The period of pitching is 40 seconds and the total angular displacement between the two extreme positions of pitching is 12 degrees.	6M	CO4	L4

UNIT-V

9.	Explain in detail the procedure of reducing a geared system into an equivalent single shaft system when (i) the effect of inertia of gearing is neglected (ii) the effect of inertia of gearing is considered	12M	CO5	L3
	(OR)			
10.	A shaft of length 1.5 m is 95 mm in diameter for the first 0.6 m of length, 60 mm in diameter for the next 500 mm length and 50 mm in diameter for the remaining 400 mm of its length. The shaft carries two rotors at two ends. The first having a mass of 900 kg and 0.85 m radius of gyration located at the 95 mm diameter end and the second having a mass of 700 kg and 0.55 m radius of gyration located at the other end. Find the frequency of natural torsional vibrations of the system. The modulus of the rigidity of the shaft material may be taken as 80 GN/m2	12M	CO5	L4

(RA)

Q.P. Code: 2004506

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Optical Communication (ECE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

		Questions	M	CO	BL
		UNIT - I			
1.	(a)	Draw the block diagram of optical fiber communication system and explain about each block.	6M	CO1	L2
	(b)	Write about mode coupling and V number.	6M	CO1	L1
		(OR)			
2.	(a)	Discuss about Cut-off wavelength and mode field diameter of single mode fibers.	6M	CO1	L3
	(b)	Estimate cut-off wavelength for step index fiber in single mode operation. The core refractive index is 1.46 and core radius is 4.5 μm. The relative index difference is 0.25 %.	6M	CO1	L3
		UNIT – II			
3.	(a)	Discuss different fiber material characteristics in detail	6M	CO2	L3
	(b)	Write about scattering losses in an optical fiber	6M	CO2	L1
		(OR)			
4.		Derive an expression for pulse spreading due to material dispersion which is a function of wavelength and time delay.	12M	CO2	L4
		UNIT – III			
5.	(a)	Draw and explain the output patterns of source to fiber power launching.	6M	CO3	L4
	(b)	Write about fiber alignment& joint losses.	6M	CO3	L1
		(OR)			
6.		Draw and compare the construction and characteristics of PIN and avalanche photo diode.	12M	CO3	L4
		UNIT – IV			
7.	(a)	Derive the equation of power coupled into step indexed optical fiber from the LED.	6M	CO4	L4
	(b)	Describe connector return loss.	6M	CO4	L2
		(OR)			
8.	(a)	Explain PIN photo detector with neat sketch.	6M	CO4	L3
	(b)	Explain how temperature effects on Avalanche gain in PIN diode	6M	CO4	L3
		UNIT-V			
9.	(a)	Explain about point-point links in optical system design	6M	CO5	L2
	(b)	A spot measurement of fiber attenuation is performed on a 1.5 km length of optical fiber at a wavelength of 1.1 μm. The measured optical output power from the 1.5 km length of fiber is 50.1 μW. When the fiber is cutback to 2m length, the measured optical power is 385.4 μW. Determine the attenuation per kilometer for the fiber at a wavelength of 1.1 μm.	6M	CO5	L2
		(OR)			
10.	(a)	What are the principles of the WDM technique? List various advantages.	6M	CO5	L2
	(b)	Write short note on attenuation measurement?	6M	CO5	L1

Q.P. Code: 2004602

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Microwave Engineering (ECE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Define Microwave frequency and briefly discuss about the advantages of Microwave signals.	6M	CO1	L1
	(b)	A Rectangular Waveguide has dimensions of a = 2.8 cm and b = .8 cm and the input signal frequency is of 10 GHZ. Find the following (i) Cut off frequency. (ii) Wavelength in the waveguide. (iii) Phase constant and phase velocity in the waveguide. (iv) wave impedance in the waveguide.	6M	CO1	L2
		(OR)			
2.	(a)	Justify the impossibility of TEM Mode in a waveguide.	6M	CO1	L2
	(b)	Explain about dielectric and ohmic losses in microstrip lines.	6M	CO1	L3
		UNIT – II			
3.	(a)	With a neat sketch explain the construction of multy cavity klystron amplifier.	6M	CO2	L2
	(b)	Explain the velocity modulation principle of a two-cavity klystron amplifier with necessary expressions and Applegate diagram.	6M	CO2	L4
		(OR)			
4.	(a)	Explain the construction and operation of reflex klystron oscillator using Applegate diagram.	6M	CO2	L3
	(b)	Derive the Efficiency of the reflex klystron oscillator.	6M	CO2	L1
		UNIT – III			
5.	(a)	Discuss about the superposition of oscillations in a TWT.	6M	CO3	L2
	(b)	What is a Slow wave structure and Describe Characteristics of Slow Wave Structures.	6M	CO3	L3
		(OR)			
6.	(a)	What is Cross-field effect and identify the microwave oscillators following Cross-field effects.	6M	CO3	L1
	(b)	Explain about different modes of operations of magnetron oscillator.	6M	CO3	L4
		UNIT – IV			
7.	(a)	Explain in detail about the Coupling Mechanisms used in microwave devices and describe about Probe, Loop, Aperture type of couplings.	6M	CO4	L2
	(b)	Derive the S-Matrix for magic Tee	6M	CO4	L2
		(OR)			
8.	(a)	List the properties of S Matrix.	6M	CO4	L3
	(b)	With a neat structure discuss the operation of a directional coupler.	6M	CO4	L4
		UNIT-V			
9.	(a)	Explain in detail about the Gunn Effect.	6M	CO5	L1
	(b)	Describe the various modes operations of Gunn Diode with neat sketch.	6M	CO5	L3
		(OR)			
10.	(a)	Explain the method of microwave power measurement using Bolometer	6M	CO5	L2
	(b)	Compare the power ratio and RF substitution methods of measuring attenuation provided by the microwave component.	6M	CO5	L3

Q.P. Code: 2004603

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

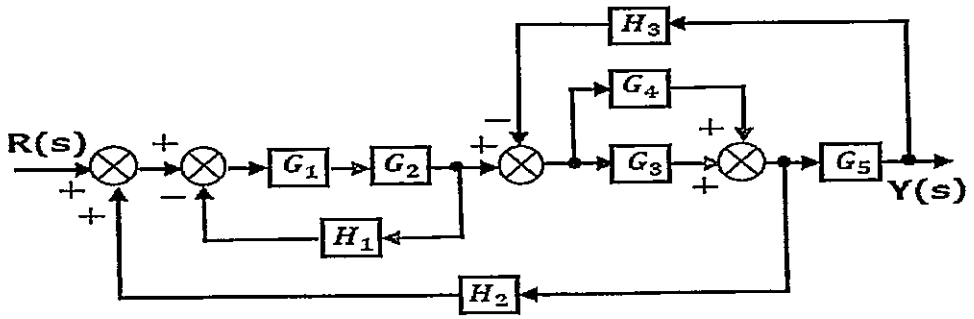
SUB: Control Systems (ECE)

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

Answer any FIVE Questions choosing one question from each unit.

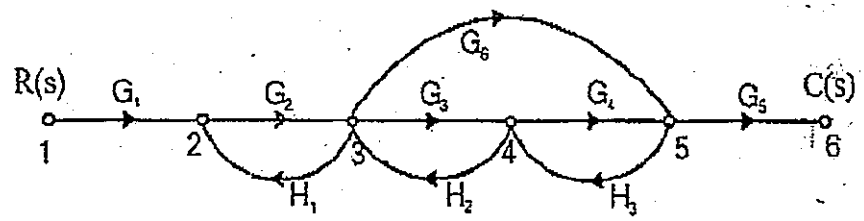
All questions carry Equal Marks.

		Questions	M	CO	BL
		UNIT - I			
1.	(a)	Define Control System and Write the Examples of Control Systems.	6M	CO1	L2
	(b)	Find the transfer function Y(S) / R(S) for the Block diagram shown in figure	6M	CO1	L3



(OR)

2.	(a)	Write the important differences between open loop and closed loop systems with suitable examples.	6M	CO1	L2
	(b)	Find the transfer function C(s) / R(s) for the given signal Flow graph	6M	CO1	L3



UNIT – II

3.	(a)	What is meant by Steady state error? Calculate the Steady state error when the input is Unit Step Signal.	6M	CO2	L5
	(b)	A unity feedback control system has $G(S) = \frac{K}{S(S+5)}$. Find the value of K, damping factor	6M	CO2	L5

(OR)

4.		A unity feedback control system has the forward transfer function, $G(S) = \frac{25}{S^2+6S+25}$. Find the response, rise time, peak time, maximum peak over shoot and settling time at 2% for unit step input.	12M	CO2	L5

UNIT – III

5.	(a)	Find the stability of the system whose characteristics equation is $s^3 + 4s^2 + 6S + 5 = 0$	4M	CO3	L3
	(b)	Draw the Root Locus for the system whose open loop transfer function is $G(S) = \frac{K}{S(S+1)(S+2)}$ and H(S) = 1	8M	CO3	L3

(OR)

6.	(a)	Find the stability of the system whose characteristics equation is $s^6 + 2s^5 + 8s^4 + 12s^3 + 20s^2 + 16S + 16 = 0$	4M	CO3	L3
	(b)	Draw the Root Locus for the system whose open loop transfer function is $G(S) = \frac{K}{S(S+2)(s+4)}$ and H(S) = 1	8M	CO3	L3

UNIT – IV

7.		Draw Bode plot for transfer function $G(S) = \frac{5(1+2S)}{(1+4S)(1+0.25S)}$	12M	CO2	L3

(OR)

8.		Given the open loop transfer function of a unity feedback system $G(S) = \frac{10}{S(1+0.4S)(1+0.1S)}$. Draw the Bode plot and measure from the plot the frequency at which the magnitude is 0 db.	12M	CO2	L3

UNIT-V

9.		Design a lead compensator for a unity feedback open loop transfer function $G(S) = \frac{1}{S(S+2)}$ having the damping coefficient 0.45, velocity error constant >20 sec-1 and settling time is small.	12M	CO4	L3

(OR)

10.	(a)	Explain the Process of Diagonalization.	6M	CO4	L1
	(b)	Construct the state model for a system characterized by the differential equation $\dddot{y} + 6\ddot{y} + 11\dot{y} + 6y = u$	6M	CO4	L5

Q.P. Code: 2004604 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: CMOS VLSI Design (ECE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	With a neat sketch explain the fabrication of CMOS transistor using n-well technique.	6M	CO1	L2
	(b)	Derive the I_{ds} Vs V_{ds} relationship of a MOS transistor under saturation and non-saturation region.	6M	CO1	L2
		(OR)			
2.	(a)	Explain the VLSI Design flow.	6M	CO1	L2
	(b)	What is Latch-up in CMOS Technology? Explain briefly.	6M	CO1	L2
		UNIT – II			
3.	(a)	Discuss the Lambda based design rules for MOS logic.	6M	CO3	L2
	(b)	Draw the stick diagram of CMOS inverter.	6M	CO2	L2
		(OR)			
4.		Draw the stick diagram and layout for 2-input CMOS NOR logic.	12M	CO3	L4
		UNIT – III			
5.	(a)	Define scaling and explain the importance of scaling.	6M	CO3	L1
	(b)	List the limitations of scaling.	6M	CO3	L1
		(OR)			
6.	(a)	Define Sheet Resistances and Inverter delay.	6M	CO2	L1
	(b)	Draw and explain Pseudo-nMOS logic.	6M	CO4	L2
		UNIT – IV			
7.	(a)	Write about RTL synthesis.	6M	CO5	L1
	(b)	Explain about High level synthesis.	6M	CO5	L2
		(OR)			
8.		Explain about Xilinx XC4000 series FPGA.	12M	CO2	L2
		UNIT-V			
9.	(a)	What is the significance of reduction of switched capacitance?	6M	CO1	L1
	(b)	What is the significance of reduction of switching activity?	6M	CO1	L1
		(OR)			
10.	(a)	How to measure short-circuit power dissipation.	6M	CO2	L2
	(b)	Evaluate total power dissipation.	6M	CO2	L4

Q.P. Code: 2005601

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Internet of Things (CSE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.		Discuss in detail about physical design of IOT with neat diagrams	12M	CO1	L2
		(OR)			
2.	(a)	Illustrate IOT communication models	6M	CO1	L3
	(b)	Discuss about IOT Enabling Technologies	6M	CO1	L2
		UNIT – II			
3.	(a)	List and explain IOT application on Home automation	6M	CO2	L3
	(b)	Explain about IoT applications on Health & Lifestyle.	6M	CO2	L2
		(OR)			
4.		Determine the various communication models that can be used for weather monitoring system and Environment domain.	12M	CO2	L3
		UNIT – III			
5.	(a)	Differentiate between IOT and M2M	6M	CO3	L3
	(b)	Explain about Software Defined Networking (SDN)	6M	CO3	L2
		(OR)			
6.		Explain in detail IOT design methodology	12M	CO3	L2
		UNIT – IV			
7.		Explain in detail about Arduino platform and getting started	12M	CO4	L2
		(OR)			
8.	(a)	Discuss about Transducer & Sensors characteristics	6M	CO4	L2
	(b)	Write an arduino program to set the LED to a brightness specified by the value of the analogue input.	6M	CO4	L2
		UNIT-V			
9.		What is an IoT device? Explain basic building blocks of an IoT device	12M	CO5	L2
		(OR)			
10.	(a)	Explain about raspberry Pi interfaces	6M	CO5	L2
	(b)	Illustrate with an example Raspberry Pi with Python	6M	CO5	L3

Q.P. Code: 2005602

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Data Mining (CSE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT – I			
1.		Explain the difference and similarity between discrimination and classification, between characterization and clustering, and between classification and regression.	12M	CO1	L2
		(OR)			
2.	(a)	What are the various kinds of patterns that can be mined? Explain them.	8M	CO1	L4
	(b)	What are the major issues in data mining? Explain them in brief.	4M	CO1	L4
		UNIT – II			
3.	(a)	Why do we need data integration? Discuss issues to consider during data integration.	6M	CO2	L1
	(b)	How can PCA assist in reducing data dimensionality in high-dimensional datasets?	6M	CO2	L1
		(OR)			
4.		Suppose a group of 12 sales price records has been sorted as follows: 5, 10, 11, 13, 15, 35, 50, 55, 72, 92, 204, 215. Partition them into three bins by each of the following methods: (i) equal-frequency (equal-depth) partitioning (ii) equal-width partitioning (iii) clustering	12M	CO2	L6
		UNIT – III			
5.		What are some measures or evaluation metrics used to assess the quality of association rules generated by the Apriori algorithm?	12M	CO3	L4
		(OR)			
6.		Write an FP-growth algorithm for the generation of frequent itemsets. By taking a suitable transaction database, generate frequent itemsets using the FP-growth algorithm.	12M	CO3	L2
		UNIT – IV			
7.	(a)	What is regression? Explain the simple linear regression with a suitable example.	6M	CO4	L1
	(b)	Describe the various accuracy and error measures for the classifier.	6M	CO4	L2
		(OR)			
8.	(a)	Why is tree pruning useful in decision tree induction? What is a drawback of using a separate set of tuples to evaluate pruning?	6M	CO4	L1
	(b)	Explain the concept of entropy and information gain in decision tree induction with examples?	6M	CO4	L2
		UNIT-V			
9.	(a)	What are the advantages and limitations of k-means clustering?	6M	CO5	L4
	(b)	List and explain applications of k-means clustering.	6M	CO5	L1
		(OR)			
10.	(a)	What is supervised outlier detection and how does it differ from unsupervised methods?	6M	CO5	L1
	(b)	Explain the performance of supervised outlier detection evaluated using labeled data?	6M	CO5	L2

Q.P. Code: 2005603

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

Sub: Cryptography & Network Security (CSE)

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

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Describe Security Attacks, Security services and security mechanisms?	6M	CO1	L1
	(b)	Write Various Fundamental Concepts of Computer Security?	6M	CO1	L2
		(OR)			
2.		Consider the following plain text "we are discovered save yourself". Convert it into Cipher text by following methods (i) ceaser cipher (ii) Playfair cipher (KEYWORD)	12M	CO1	L3
		UNIT – II			
3.		Explain DES Algorithm with a neat sketch?	12M	CO2	L2
		(OR)			
4.	(a)	Explain Eculidean and extended Euclidean algoritham and find gcd & S,T of given numbers: (i) 400, 60 (ii) 84 , 320	6M	CO2	L2
	(b)	Describe Block cipher modes of operations in detail?	6M	CO2	L3
		UNIT – III			
5.		Write RSA Algorithm and Apply RSA Algorithm and solve the problem? P=11,q=13,e=11 and m=7.	12M	CO3	L3
		(OR)			
6.	(a)	Describe Hash functions based on Cipher Block Chaining?	6M	CO3	L3
	(b)	Write Secure Hash Algorithm (SHA)?	6M	CO3	L1
		UNIT – IV			
7.	(a)	Write a brief Note on Message Authentication Codes?	6M	CO4	L1
	(b)	Differentiate MAC and HMAC With Examples?	6M	CO4	L1
		(OR)			
8.	(a)	Define Digital Signature and Write the Properties of Digital Signature?	6M	CO4	
	(b)	Describe the Schnorr Digital Signature Scheme with Examples?	6M	CO4	L3
		UNIT-V			
9.	(a)	Describe the Overview of Kerberos and Explain Requirements and Characteristics of Kerberos ?	6M	CO5	L3
	(b)	Differentiate different kinds of Worms and Viruses?	6M	CO5	L1
		(OR)			
10.		What are the two methods for proving security for electronic mails? Describe (i) Pretty Good Privacy (ii) S/MIME	12M	CO5	L1

Q.P. Code: 2005604

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Artificial Intelligence (CSE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Explain about Defining the Problem as a State Space Search.	6M	CO1	L3
	(b)	Describe the Heuristic Search Techniques.	6M	CO1	L4
		(OR)			
2.		Discuss the characteristics of AI problem. Can Towers of Hanoi problem be considered as AI problem? Justify your answer with suitable discussions.	12M	CO1	L3
		UNIT – II			
3.		Describe the Predicate Logic in detail.	12M	CO2	L3
		(OR)			
4.	(a)	How knowledge can be represented using the rules? Explain	6M	CO2	L3
	(b)	Discuss the knowledge representation using script in AI.	6M	CO2	L4
		UNIT – III			
5.		Explain the symbolic reasoning under uncertainty.	12M	CO3	L4
		(OR)			
6.	(a)	List and explain the advantages of Bayesian network.	6M	CO3	L3
	(b)	Discuss the four techniques of uncertainty reasoning.	6M	CO3	L4
		UNIT – IV			
7.		Explain the slot filter structure in AI.	12M	CO4	L3
		(OR)			
8.		Discuss the weak and strong slot and filler structure.	12M	CO4	L3
		UNIT-V			
9.		Explain the importance and goals of the Natural Language Processing.	12M	CO5	L4
		(OR)			
10.		Define NLP? Explain in brief about Organization of Natural language Understanding Systems.	12M	CO5	L4

Q.P. Code: 2006602

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Digital Marketing (OE)

Time: 3 Hours | Max. Marks: 60

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Examine the Concept of Digital Marketing.	6M	CO1	L2
	(b)	Distinguish between Marketing and Digital Marketing.	6M	CO1	L4
		(OR)			
2.	(a)	Explain the significance of Digital Marketing in Today's Global Business.	6M	CO1	L2
	(b)	Explain Various Strategies in Digital Marketing.	6M	CO1	L2
		UNIT – II			
3.	(a)	Explain about Search Engine Marketing.	6M	CO2	L2
	(b)	Organize Marketing in the Digital Era Segmentation.	6M	CO2	L3
		(OR)			
4.	(a)	Conclude on Blog Marketing and Social Media Marketing.	6M	CO2	L5
	(b)	Analyze your view on Online Advertising.	6M	CO2	L4
		UNIT – III			
5.	(a)	Discuss about Situational Analysis.	6M	CO3	L6
	(b)	Formulate Goals and Objectives for online streaming business applications.	6M	CO3	L6
		(OR)			
6.	(a)	Explain Need for Marketing Plan.	6M	CO3	L2
	(b)	Appraise various points in preparing Executive Summary.	6M	CO3	L5
		UNIT – IV			
7.	(a)	Evaluate the Advantages & Disadvantages in Online Advertising.	6M	CO4	L5
	(b)	Illustrate the process of Understanding Web Search.	6M	CO4	L2
		(OR)			
8.	(a)	Discuss about Display Ads.	6M	CO4	L6
	(b)	Explain Payment Methods of Online Advertising.	6M	CO4	L2
		UNIT-V			
9.	(a)	Explain about Social Networking.	6M	CO5	L2
	(b)	Discuss about Analyzing Website Performance.	6M	CO5	L6
		(OR)			
10.	(a)	Discuss the Role of Social Media Apps in Digital Marketing.	6M	CO5	L6
	(b)	Summarize on Blogging as a Social Medium.	6M	CO5	L2

Q.P. Code: 20OE2603 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Employability Skills (OE)

Time: 3 Hours | Max. Marks: 60

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT – I			
1.	(a)	Explain Communication. State the importance of Communication.	6M	CO1	L4
	(b)	What are Interpersonal Skills? Elucidate	6M	CO1	L2
		(OR)			
2.	(a)	Define the characteristics of a good leader.	6M	CO1	L1
	(b)	How do you improve your interpersonal skills?	6M	CO1	L1
		UNIT – II			
3.	(a)	Organize the essential tips for time management	6M	CO2	L3
	(b)	Explain adaptability skills.	6M	CO2	L4
		(OR)			
4.		Give in detail on Time Management and its essential tips.	12M	CO3	L6
		UNIT – III			
5.	(a)	Can you list out the methods of Conflict Resolution?	6M	CO3	L1
	(b)	How do you describe Conflict and its types and causes?	6M	CO3	L1
		(OR)			
6.	(a)	Discuss methods of conflict resolution	6M	CO4	L6
	(b)	Evaluate ethical decision making	6M	CO3	L5
		UNIT – IV			
7.	(a)	What are the symptoms and causes of Stress?	6M	CO4	L1
	(b)	Illustrate Stress Analysis Models.	6M	CO4	L2
		(OR)			
8.	(a)	Prioritize the stress management techniques	6M	CO3	L5
	(b)	Write a short note on Stress Management.	6M	CO4	L1
		UNIT-V			
9.		List out the presentation skills and explain the phases of the presentation.	12M	CO5	L1
		(OR)			
10.	(a)	What do you do before and during the interview for your success in an interview?	6M	CO5	L1
	(b)	Spell out basic skills in Presentation.	6M	CO5	L1

Q.P. Code: 20OE302 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Robotics and Applications in Manufacturing (OE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Describe the importance of precision of motion in robots?	6M	CO1	L2
	(b)	Provide an example of a real-life application where robots are used?	6M	CO1	L3
		(OR)			
2.	(a)	How would you apply the matrix representation to calculate a pure rotation about a specific axis?	6M	CO1	L3
	(b)	Compare the matrix representation of a point in a space and a frame in space?	6M	CO1	L4
		UNIT – II			
3.	(a)	Describe the inverse kinematic equations for position and orientation?	6M	CO2	L4
	(b)	Explain the concept of degeneracy and its implications in robot kinematics?	6M	CO2	L2
		(OR)			
4.	(a)	Compare and contrast the Jacobian and inverse Jacobian?	6M	CO2	L4
	(b)	How to control the differential changes between frames in robot kinematics?	6M	CO2	L2
		UNIT – III			
5.	(a)	Distinguish the open-loop and closed-loop control in manipulators?	6M	CO3	L4
	(b)	Describe the force control system of robotic manipulators?	6M	CO3	L2
		(OR)			
6.	(a)	Describe the linear second-order SISO model of a manipulator joint?	6M	CO3	L2
	(b)	Discus the impact of impedance force and torque control on the performance of a manipulator?	6M	CO3	L2
		UNIT – IV			
7.	(a)	Explain the components and their roles in the architecture of a robotic vision system?	6M	CO4	L2
	(b)	Explain the image processing techniques to enhance the quality of a given image in robot vision?	6M	CO4	L2
		(OR)			
8.	(a)	Explain the metrist and demerits of using camera transformation and calibration in robot vision systems?	6M	CO4	L2
	(b)	How an image acquisition system used for a specific robotic vision application?	6M	CO4	L2
		UNIT-V			
9.	(a)	Describe the application of robot in material handling?	6M	CO5	L3
	(b)	Explain the application of robot in spot welding?	6M	CO5	L3
		(OR)			
10.	(a)	How a robot is used for spray painting?	6M	CO5	L3
	(b)	Explain the application of robot in assembly of components?	6M	CO5	L3

Q.P. Code: 2006603

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Project Management (CE & ECE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Define Project Management. Explain Project life cycle.	6M	CO1	L1
	(b)	Write a short note on Project Management Process	6M	CO1	L2
		(OR)			
2.	(a)	Illustrate principles of Project Management	6M	CO1	L4
	(b)	Explain the Break-Even Analysis with an example?	6M	CO1	L3
		UNIT – II			
3.	(a)	Outline the cost of the Project and Finance	6M	CO2	L2
	(b)	Elucidate merits and Demerits of Pay-back Period Method	6M	CO2	L3
		(OR)			
4.		NIIT Ltd. is contemplating to purchase a machine. Two Machine Xan Machine Y Both machines costing Rs of 5,00,000. In comparison the profitability of the of machines a discounted rate of 10% is to be used, Earnings after taxation are expected as follows.	12M	CO2	L4

Year	1	2	3	4	5
Machine X	1,50,000	2,00,000	2,50,000	2,50,000	1,00,000
Machine Y	50,000	1,50,000	2,00,000	3,00,000	2,00,000

Hint: Discount factors@10%, years 1-0.909, 2- 0.826,3 -0.751, 4- 0.683, and 5 -0.621

Compute (i) Net Present Value (NPV)

(ii) Portability Index (PI) and Suggest which Project Accept or not

		UNIT – III			
5.	(a)	What is Risk Management? Discuss Role of Risk Management in Project Management.	6M	CO3	L2
	(b)	State the features of Sensitivity analysis	6M	CO3	L3
		(OR)			
6.	(a)	Explain about Project quality Management in briefly	6M	CO3	L1
	(b)	Discuss in detail about Value Engineering	6M	CO3	L2
		UNIT – IV			
7.	(a)	Distinguish Between PERT and CPM	6M	CO4	L3
	(b)	How to Develop Project Network?	6M	CO4	L4
		(OR)			
8		Draw the network diagram, determine the critical path and project completion time for the following project:	12M	CO4	L6

Activity	1-2	1-3	1-4	2-5	3-6	3-7	4-7	5-8	6-8	7-9	8-9
Time Estimates (weeks)	5	6	3	5	7	10	4	2	5	6	4

		UNIT-V			
9.	(a)	Discuss Common Features Found in Project Management Software?	6M	CO5	L2
	(b)	Describe Project Performance Measurement and Evaluation (PPME).	6M	CO5	L3
		(OR)			
10.	(a)	Essential Requirements of Project Management Software?	6M	CO5	L2
	(b)	State the Process of Project Execution & Control?	6M	CO5	L3

Q.P. Code: 2006601 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Human Resource Development (CE & ECE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.	(a)	Illustrate the significance of Human Resource Development	6M	CO1	L4
	(b)	Write about the Objectives of Human Resource Development.	6M	CO1	L3
		(OR)			
2.	(a)	List out the functions of Human Resource Management	6M	CO1	L1
	(b)	Outline the challenges of Human Resource Development.	6M	CO1	L2
		UNIT – II			
3.	(a)	Examine the ways to assess the Human Resource Development.	6M	CO2	L4
	(b)	Explain the criteria for selecting the Training Methods	6M	CO2	L5
		(OR)			
4.	(a)	Write a short note on Task Analysis and Person Analysis.	6M	CO2	L3
	(b)	Illustrate the key content in preparing the training materials	6M	CO2	L4
		UNIT – III			
5.	(a)	State the merits and demerits of Classroom Training Approach.	6M	CO3	L1
	(b)	Discuss the purpose of HRD Evaluation.	6M	CO3	L2
		(OR)			
6.	(a)	Outline the Krickpatric's evaluation framework.	6M	CO3	L2
	(b)	Summarize the data collection for HRD Evaluation.	6M	CO3	L2
		UNIT – IV			
7.	(a)	Differentiate between Career Management and Career Development.	6M	CO4	L4
	(b)	Present the steps in Career Management.	6M	CO4	L2
		(OR)			
8.	(a)	Write about the various stages in Career.	6M	CO4	L3
	(b)	Discuss the various issues in Career Development	6M	CO4	L2
		UNIT-V			
9.		Elucidate the need of Organizational Culture. Discuss its types	12M	CO5	L6
		(OR)			
10.		Evaluate the recent trends in Indian Labour Market.	12M	CO5	L6

Q.P. Code: 20OE603 | SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

Sub: Mathematical Statistics for Data Science & Data Analytics (CSE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

			M	CO	BL
		UNIT - I			
1.		Calculate the mean, median of the following data	12M	CO1	L5

Marks	10-25	25-40	40-55	55-70	70-85	85-100
Frequency	6	20	44	26	3	1

(OR)

2.		Define Range with an example and define Skewness with neat diagrams.	12M	CO1	L1
		UNIT – II			
3.	(a)	A card is drawn from a well shuffled pack of cards. What is the probability that is tis either a spade or an ace?	6M	CO2	L2
	(b)	If A and B are two events such that P(A)=1/3 , P(B)=3/4 and (AUB)=11/12 find P(A/B) and P(B/A)	6M	CO2	L3
		(OR)			
4.	(a)	Box A contains 5 red and 3 white marbles and box B contains 2 red and 6 white marbles. If a marble is drawn from each box, what is the probability that they are both of same colour.	6M	CO2	L5
	(b)	State and Prove Baye's theorem.	6M	CO2	L5
		UNIT – III			
5.		20% of the items produced from a factory are defective. Find the probability that in a sample of 5 chosen at random (i) none is defective (ii) one is defective (iii) P(1<x<4)	12M	CO3	L3
		(OR)			
6.		Fit a Poisson distribution to the following data	12M	CO3	L4

x	0	1	2	3	4	5	Total
f	142	156	69	27	5	1	400

		UNIT – IV			
7.	(a)	If we can assert with 95% that the maximum error of 0.05 and p=0.2find the size of the sample.	6M	CO4	L1
	(b)	A random sample of size 300 has a standard deviation of 5and mean 54. Construct 95% confidence interval for the mean.	6M	CO4	L1
		(OR)			
8.		Define Null Hypothesis, Alternative Hypothesis, Level of significance, Type I and Type II errors.	12M	CO4	L1
		UNIT-V			
9.		Psychological test of intelligence and of engineering ability were applied to 10 students. Here is a record of ungrouped data showing intelligence ratio (I.R.) and engineering ratio (E.R.). Determine the co-efficient of correlation.	12M	CO5	L5

Student	A	B	C	D	E	F	G	H	I	J
I.R.	105	104	102	101	100	99	98	96	93	92
E.R.	101	103	10	98	95	96	104	92	97	94

(OR)

10.		Find the regression lines and correlation coefficient of the following	12M	CO5	L5

x	1	2	3	4	5
y	15	25	35	45	55

Q.P. Code: 20OE104

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Solid Waste Management (CSE)

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

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

		M	CO	BL
	UNIT - I			
1.	What is solid waste and explain various types of solid wastes?	12M	CO1	L1
	(OR)			
2.	Summarize various functional elements of solid waste management?	12M	CO1	L2
	UNIT – II			
3.	Explain about the factors affecting solid waste generation rate?	12M	CO2	L2
	(OR)			
4.	Distinguish haul container system and stationary container system of solid waste collection?	12M	CO2	L4
	UNIT – III			
5.	What are various basic techniques of energy recovery from solid waste?	12M	CO3	L1
	(OR)			
6.	Explain various parameters affecting energy recovery from solid waste?	12M	CO3	L2
	UNIT – IV			
7.	List the various Landfill Problems?	12M	CO4	L1
	(OR)			
8.	Evaluate the importance of lining of landfills of solid wastes?	12M	CO4	L5
	UNIT-V			
9.	Explain various sources of hazardous waste solid waste management?	12M	CO5	L2
	(OR)			
10.	Define secured landfills. Explain the functional requirements of secured landfills?	12M	CO5	L1

Q.P. Code: 20OE104

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Solid Waste Management (CSE)

Time: 3 Hours Max. Marks: 60

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

(OR)

4. Distinguish haul container system and stationary container system of solid waste collection? 12M CO2 L4

UNIT – III

5. What are various basic techniques of energy recovery from solid waste? 12M CO3 L1

(OR)

6. Explain various parameters affecting energy recovery from solid waste? 12M CO3 L2

UNIT – IV

7. List the various Landfill Problems? 12M CO4 L1

(OR)

8. Evaluate the importance of lining of landfills of solid wastes? 12M CO4 L5

UNIT-V

9. Explain various sources of hazardous waste solid waste management? 12M CO5 L2

(OR)

Q.P. Code: 20OE2604

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA

B. Tech. VI Semester (R20UG) Regular Examinations of July – 2023

SUB: Write it Right (ME)

Time: 3 Hours | Max. Marks : 60

Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

		Questions	M	CO	BL
		UNIT - I			
1.	(a)	Construct the guidelines for persuasive/convincing writing?	6M	CO1	L1
	(b)	Illustrate the punctuation marks in English grammar and What are the uses of comma, colon and semicolon?	6M	CO1	L2
		(OR)			
2.		How to write a job application letter effectively? Write a cover letter to the HR of WIPRO for the post DATA ANALYSIST	12M	CO1	L6
		UNIT – II			
3.	(a)	Explain Prewriting is a process to generate ideas.	6M	CO2	L5
	(b)	Classify the types of essay writing?	6M	CO2	L4
		(OR)			
4.		Discuss in detail various patterns of paragraph development	12M	CO2	L6
		UNIT – III			
5.	(a)	What techniques do good writers adopt for improving their trade as writers?	6M	CO3	L1
	(b)	Compare and contrast between Artificial Intelligence and Human knowledge.	6M	CO3	L2
		(OR)			
6.		**Identify the errors in the following making necessary correction** **(i)** The cars in the lot looks shabby. **(ii)** For what you are asking now? **(iii)** The peasant killed the goose that lay golden eggs who was greedy of becoming rich quickly. **(iv)** I have come to a final conclusion. **(v)** TV will telecast James analogy on post-COVID situation who is my best friend. **(vi)** It is a one billion dollars house he is purchasing. **(vii)** I will go too if you will go. **(viii)** He demanded for a reduction in the price. **(ix)** He is one of those few whom we trust. **(x)** I should know what is the content of the message. **(xi)** More you invest, more are your profits. **(xii)** The necessities of life are expensive these days.	12M	CO3	L5
		UNIT – IV			
7.	(a)	List out various situations where we can use Definite article giving one example for each.	6M	CO4	L4
	(b)	Can you list the inspiring quotes of a few notable writers on writing?	6M	CO4	L1
		(OR)			
8.		Why is the English language odd and awkward?	12M	CO4	L4
		UNIT-V			
9.	(a)	Expand '**Great talkers are never great doers**'.	6M	CO5	L2
	(b)	What are the advantages of Note Making?	6M	CO5	L1
		(OR)			

10.	(a)	What is precis? What are its dos and don'ts?	6M	CO5	L1
	(b)	**Build a précis of the following passage reducing it to $1/3^{rd}$ of its length.**	6M	CO5	L6

If the old world is dead there are at least faint indications that a new world is getting ready to be born. Most encouraging of all is the increasing concern with the good earth and its bounty. Even if education has not reached the poor, awareness has. Witness the Chipko and Appiko movements where tribals, mainly women hugged their trees to prevent them from being felled. The tribal have now realized that government claims of development only meant money and advantage to some fat men who are far away from tribal area. They no longer want cash compensation for being displaced by dams and mines- They want cash compensation for being displaced by dams and mines- They want land for land. Environmental Activism has already stopped two dams – Silent valley in Kerala and Bedhi dam in Karnataka. Strong protests have also led to litigation against limestone mining in Dehradun. The reports say that nature can never be managed well unless the people closest to it are involved in its management. There is still time to act, however gloomy the scenario may look, otherwise, there is worse to come (174 words)