Q.P. Code: 1801701 | SET - 1

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

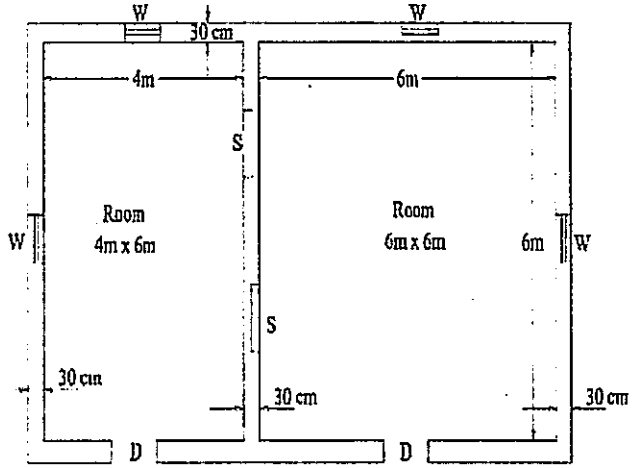
B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Engineering Economics, Estimation & Costing (CE)

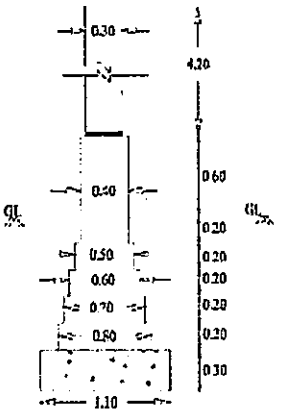
Time: 3 Hours **Max. Marks: 70**

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Differentiate long wall- short wall method with central line method and explain which method is flexible for estimation of multi-storey buildings?	7M	CO1	L1
	(b)	Write the specification for concrete and earth work excavation?	7M	CO1	L1
		(OR)			
2.	(a)	Explain the method of estimating earthwork excavation and size stone masonry of building.	7M	CO1	L1
	(b)	Write the detailed specification for plastering in CM 1:3 for inside walls.	7M	CO1	L2
		UNIT – II			
3.		Estimate the quantities of following items of a two roomed building given in the figure below. (i) Earthwork in excavation in foundation trench (ii) Cement concrete in foundation (iii) First class brick work with cement mortar 1:6 in foundation and plinth (iv) Class I brick work with cement mortar 1:6 in superstructure *Exclude deductions of doors and windows.	14M	CO2	L3



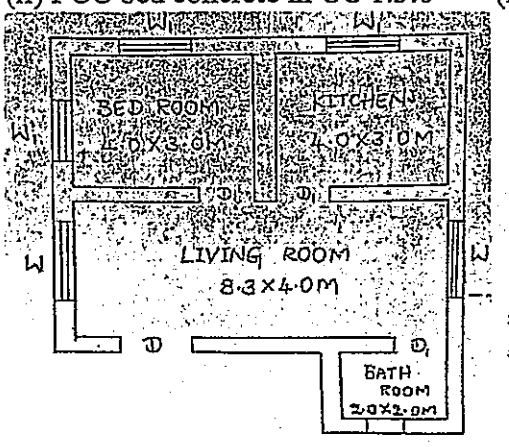
(a) Plan

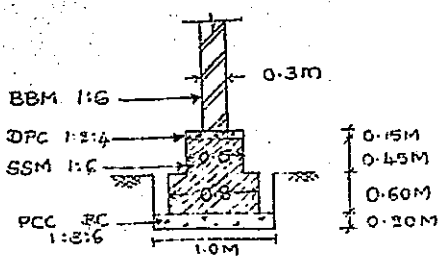


(b) Details of footing

(OR)

4.		Prepare the quantity for the following items by center line method for the residential building detailed in the figure: (i) Earthwork excavation for foundation in hard soil. (ii) PCC bed concrete in CC 1:3:6 (iii) Size stone masonry in CM 1:6	14M	CO2	L3





UNIT – III

5.	(a)	Prepare a rate chart for 30 cm wall of length 10 m and height 5 m, use 1:3 mortar for joint.	7M	CO3	L3
	(b)	Prepare a rate chart for cement concrete 1:4:8 in foundation for 10 cu. m.	7M	CO3	L3
		(OR)			
6.	(a)	Write a short note on plastering.	7M	CO3	L1
	(b)	Prepare a rate chart for 10 cu. m of class I brick masonry with cement mortar 1:6. (Consider clay brick for brick masonry).	7M	CO3	L3

UNIT – IV

7.		A three storied building is standing on a plot of land measuring 800 sq. m. The plinth area of each storey is 400 sq. m. The building is of RCC framed structure and the future life may be taken as 70 years. The building fetches a gross rent of Rs. 30,000 per month. Work out the capitalized value of the property based on 6% net yield. For sinking fund 3% compound interest may be assumed. Cost of land may be taken as Rs. 1000 per sq. m. Assume if any other data is required.	14M	CO4	L3
		(OR)			
8.		Estimate the quantity of steel required for a R.C.C (1:2:4) slab 120 mm thick provided for a room 3.25 m X 7.5 m, resting over a 300 mm thick walls. Reinforcement details: **Main reinforcement:** 10mm ø bars at 160 mm c/c (alternate bars are bent-up). **Distribution reinforcement:** 8mm ø at 200 mm c/c. Also prepare the bar bending schedule.	14M	CO4	L3

UNIT-V

9.	(a)	What are the types of contract? Briefly explain them.	7M	CO5	L1
	(b)	List the contract documents and explain them.	7M	CO5	L1
		(OR)			
10.	(a)	Write the necessity of valuation	7M	CO5	L1
	(b)	What are the important factors influencing the value of building?	7M	CO5	L1

Q.P. Code: 1s01702

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

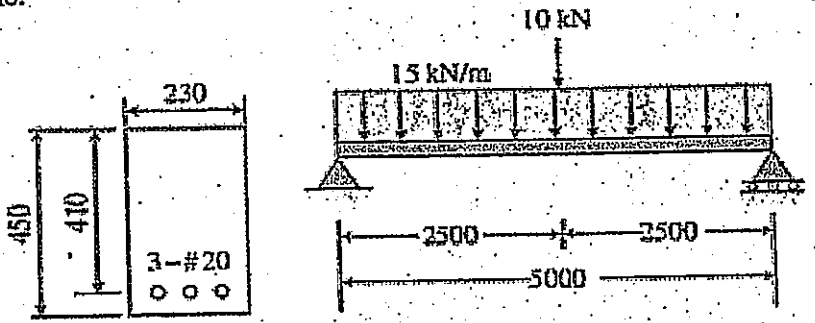
SUB: Design of Reinforced Concrete Structures - 2 (CE)

Time: 3 Hours Max. Marks: 70

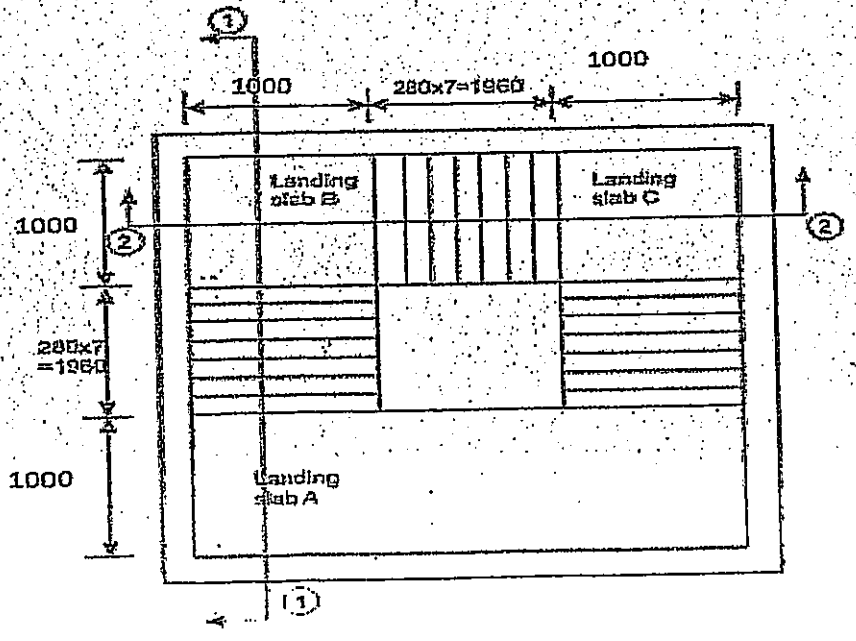
Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Discuss brief about short-term and long-term deflections.	7M	CO1	L2
	(b)	Difference Between Working Stress Method and Limit State Method.	7M	CO1	L3
		(OR)			
2.		A simply supported beam as shown in Fig. 1 is made of M20 grade concrete and is reinforced with three 20 mm bars of Fe 415 grade steel. If it is subjected to an imposed load of 15kN/m and a concentrated dead load of 10 kN at mid span, calculate the short-term deflection due to live loads alone.	14M	CO1	L3



		UNIT – II			
3.		Design a transversely spanning waist slab-type staircase with the main stair of an office building should be located in an area measuring 3.5 m x 5.5 m. The vertical distance between the floors is 3.75 m. Design the stairs. Take live load (L.L) of 2000 N/m2, M20 grade concrete, and Fe 415 steel. Assume any missing data accordingly.	14M	CO2	L4
		(OR)			
4.		Design the open-well staircase shown in Fig.4 supported on brick walls 300 mm thick. Risers =160 mm ,Treads = 280 mm, Finish loads =1 kN/m2 , LL = 5 kN/m2, Use M 20 Fe 415. Assume any missing data accordingly.	14M	CO2	L3



UNIT – III

5.	(a)	Differentiate between open well and dog legged staircase.	7M	CO3	L
	(b)	With a neat sketch, explain the reinforcement pattern in first and second flights of a dog legged staircase.	7M	CO3	L
		(OR)			
6.		Design a cantilever retaining wall (i.e. T-type) to retain earth for a height of 4m. The backfill is horizontal. The density of soil is 18 kN/m^3. Safe bearing capacity of soil is 200 kN/m^2. Take the coefficient of friction between concrete and soil as 0.6. The angle of repose of earth is 30o. Use M20 concrete and Fe500 steel. Assume any missing data accordingly.	14M	CO3	L
		UNIT – IV			
7.	(a)	Explain the Step by Step Procedure of Isolated Footing Design.	7M	CO4	L
	(b)	Design a plain concrete footing for a column of 400 mm x 400 mm carrying an axial load of 400 kN under service loads. Assume safe bearing capacity of soil as 300 kN/m^2 at a depth of 1 m below the ground level. Use M20 and Fe415 for the design. Assume any missing data accordingly.	7M	CO4	L
		(OR)			
8.		Design an isolated footing for a square column, 400 mm x 400 mm with 12-20 mm diameter longitudinal bars carrying service loads of 1500 kN with M 20 and Fe 415. The safe bearing capacity of soil is 250 kN/m^2 at a depth of 1 m below the ground level. Use M 20 and Fe 415. Assume any missing data accordingly.	14M	CO4	L
		UNIT-V			
9.		Design a circular water tank with flexible connection at base for a capacity of 4, 00,000liters. The tank rests on a firm level ground. The height of tank including a free board of 200 mm should not exceed 3.5m. The tank is open at top. Use M 20 concrete and Fe415 steel. Draw to a suitable scale: (i) Plan at base (ii) Cross section through center of tank. Assume any missing data accordingly.	14M	CO5	L
		(OR)			
10.		Design an R.C. tank of internal dimensions 10mx3mx3m.the tank is to be provided underground. The soil surrounding the tank is likely to get wet. Angle of repose of soil in dry state is 300 and in wet state is 6^0. Adopt suitable working stresses. Soil weights 20 kN/m3. Adopt M20 concrete and Fe 415 grade steel. Assume any missing data accordingly.	14M	CO5	

Q.P. Code: 1801703

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January - 2023

SUB: Design of Steel Structures (CE)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Define Shape factor. Derive the shape factor for rectangle as well as triangle with width 'b' and height 'h'.	7M	CO1	L3
	(b)	Explain the various conditions in plastic analysis.	7M	CO1	L2
		(OR)			
2.	(a)	Write the assumptions regarding the end connections.	7M	CO1	L1
	(b)	Define the terms: (i) Effective throat thickness (ii) Effective area (iii) Design strength (iv) long butt weld (v) End fillet weld	7M	CO1	L1
		UNIT – II			
3.		A tension member 0.95 m long is to resist a service dead load of 25 kN and a service live load of 60 kN. Design a rectangular bar of standard structural steel of grade Fe410. Assume that the member is connected by one line of 16 mm diameter bolts of grade 4.6.	14M	CO2	L4
		(OR)			
4.		Design a stanchion 3.6 m long in a building, subjected to a factored load of 640 kN. Both the ends of the stanchion are effectively restrained in direction and position. Use steel of grade Fe410.	14M	CO2	L4
		UNIT – III			
5.		Design a laterally unsupported beam having effective span of 4m, maximum bending moment of 660 kN.m, and maximum shear force of 300 kN by using steel of grade Fe410.	14M	CO3	L4
		(OR)			
6.		A simply supported steel joist of 5 m effective span is laterally supported throughout. It carries a total uniformly distributed load of 50 kN (includes self-weight). Design an appropriate section using steel of grade Fe410.	14M	CO3	L4
		UNIT – IV			
7.	(a)	Explain the design procedure for beam-columns as per limit state method of design.	7M	CO4	L3
	(b)	Write the reasons for the tension member to be subjected to bending moment along with direct tensile force.	7M	CO4	L1
		(OR)			
8.		Design stiffened seat connection for ISMB 350 transmitting factor and reaction 400kN to column section ISHB 300. Use 410 steel and 4.6 grade bolt.	14M	CO4	L4
		UNIT-V			
9.		Design a suitable bolted gusset base for a column of type ISHB350 @ 661.2 N/m carries an axial compressive factored load of 1800 kN. The base rests on M20 grade concrete pedestal. Use 20 mm diameter bolts of grade 4.6 for making the connections.	14M	CO5	L4
		(OR)			
10.		A column section ISHB 450 @ 907.4 N/m is subjected to following factored loads. Axial compressive load, P of 600 kN, Moment M of 150 kNm. Assuming M30 grade of concrete for the pedestal and a square base plate, design the following. (i) Thickness of the base plate (ii) anchor bolts (iii) welds Assume fe410 grade of steel with $f_u = 410$ MPa, $f_y = 250$ MPa	14M	CO5	L4

Q.P. Code: 1801704 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Water Resources Engineering- 2 (CE)

Time: 3 Hours | Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	What are the different types of spillways with the help of neat sketches?	7M	CO1	L1
	(b)	Describe briefly about components of Spillways and necessity of spillways.	7M	CO1	L4
		(OR)			
2.		Design an ogee spillway with the following data (i) Height of spillway crest above river bed = 100 m (ii) Design discharge= 12.00 cumecs, (iii) Number of spans= 6 (iv) Clear distance between piers= 15 m (v) Thickness of pier= 3 m (vi) Slope of d/s face of the overflow section= 0.8 : 1 Assume any other data if required.	14M	CO1	L6
		UNIT – II			
3.		Define canal fall. What are the factors should be considered while deciding the necessity and location of fall?	14M	CO2	L1
		(OR)			
4.		Design a Sarda type fall for the following data (i) Full supply discharge(u/s)/(d/s)= 40cumics (ii) Full supply level(u/s)/(d/s)= 218.30m/216.80m (iii) Full supply depth (u/s)/(d/s)= 1.8m/1.8m (iv) Bed with (u/s)/(d/s)= 26m/26m (v) Bed level (u/s)/(d/s)= 216.50m/215.00m (vi) Drop= 1.5m Design the floor on Bligh's theory taking coefficient of creep= 8. Check the design by Khosla's theory and make changes if necessary. Safe exit gradient may be taken as 1/5.	14M	CO2	L6
		UNIT – III			
5.	(a)	What is a distributary head regulator? What are the functions of a distributary head regulator?	7M	CO3	L1
	(b)	What is meant by canal outlet? Discuss any three types of canal outlets.	7M	CO3	L1
		(OR)			
6.		Design a cross regulator for a canal for the following data (i) Discharge= 150 cumecs. (ii) F.S.L U/s = 200.00 D/s = 199.50 (iii) Bed level U/s = 197.50 D/s = 197.30 (iv) Bed width U/s = 55 m D/s = 50 m (v) Depth of water U/s = 2.50 D/s = 2.50 m Assume a safe exit gradient of 1/6.	14M	CO3	L6
		UNIT – IV			
7.	(a)	Describe with the help of neat sketches the various types of cross drainage works.	7M	CO4	L4
	(b)	Define cross-drainage work. What are the factors to be considered while selecting the most suitable type of cross drainage work?	7M	CO4	L1
		(OR)			
8.	(a)	Differentiate between super passage and canal syphon.	7M	CO4	L4
	(b)	Explain the method of determining uplift pressure on the roof of a syphon aqueduct.	7M	CO4	L2
		UNIT-V			
9.	(a)	Describe some common pitfalls in planning of a water resources project.	7M	CO5	L4
	(b)	Define the terms (i) discount factor (ii) sinking fund factor (iii) capital recovery factor	7M	CO5	L1
		(OR)			
10.	(a)	How an independent, multipurpose project may be evaluated?	7M	CO5	L5
	(b)	Discuss the various steps involved in the planning of water resources development project.	7M	CO5	L6

Q.P. Code: 1801710

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Construction Project Planning & Systems (CE)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Describe the Functions of Construction Manager.	7M	CO1	L2
	(b)	Explain about different Stages in Construction Industry.	7M	CO1	L2
		(OR)			
2.	(a)	Describe the History of Construction Management.	7M	CO1	L2
	(b)	Write the role of Resources in Construction Management	7M	CO1	L1
		UNIT – II			
3.	(a)	Describe any five network rules with the help of sketches.	7M	CO2	L2
	(b)	Define 'activity' and list the types based on a network diagram.	7M	CO2	L1
		(OR)			
4.	(a)	Draw the Network diagram for the given activity conditions and find the Critical Path based on Slack for the same network diagram.	7M	CO2	L6

Activity	1 – 2	1 – 3	1 – 4	2 – 5	3 – 5	4 – 6	5 – 6
Duration (Days)	1 – 1 – 7	1 – 4 – 7	2 – 2 – 8	1 – 1 – 1	2 – 5 – 14	2 – 5 – 8	3 – 6 – 15

	(b)	Draw the Network diagram for the given activity conditions and find the Critical Path based on Floats for the network diagram.								7M	CO2	L6

Activity	1 – 2	1 – 3	2 – 5	2 – 7	3 – 4	3 – 6	4 – 5	5 – 6	5 – 7	6 – 7	7 – 8
Duration (Days)	10	12	8	12	6	5	8	8	10	6	12

		UNIT – III			
5.	(a)	Describe the types of equipment required for Road laying work.	7M	CO3	L2
	(b)	Explain the term Crusher and write its types in industry in detail.	7M	CO3	L2
		(OR)			
6.	(a)	Summarize the need of construction equipment management in site.	7M	CO3	L2
	(b)	What are the different types of concreting equipment? Explain in detail.	7M	CO3	L1
		UNIT – IV			
7.	(a)	Describe the Need for Inspection in construction site.	7M	CO4	L2
	(b)	Explain the different Stages of Quality Control in construction site.	7M	CO4	L2
		(OR)			
8.	(a)	Describe the role of safety in construction industry.	7M	CO4	L2
	(b)	List and explain causes of accidents in construction industry.	7M	CO4	L4
		UNIT-V			
9.	(a)	Discuss about the general principles of contract document.	7M	CO5	L6
	(b)	Explain the significant aspects of EMD and Security Deposit.	7M	CO5	L2
		(OR)			
10.	(a)	List and explain the conditions of contractor.	7M	CO5	L4
	(b)	State the purpose of penalties in contract agreement.	7M	CO5	L1

Q.P. Code: 1801711

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Environmental Impact Assessment (CE) (PE - III)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Explain about Elements of EIA?	7M	CO1	L2
	(b)	Write the Classification of Environmental Parameters?	7M	CO1	L2
		(OR)			
2.	(a)	What are the Factors Affecting EIA?	7M	CO1	L1
	(b)	Analyze the Preparation of Environmental Base Map?	7M	CO1	L4
		UNIT – II			
3.		Explain the Overlay Methods and Cost Benefit Analysis?	14M	CO2	L5
		(OR)			
4.		Discuss the Ad-hoc Methods, in detail?	14M	CO2	L6
		UNIT – III			
5.		Summarize the Methodology for the Assessment of Soil and Ground Water?	14M	CO3	L2
		(OR)			
6.		Briefly explain the Methodology for the Assessment of Impacts on Surface Water Environment?	14M	CO3	L5
		UNIT – IV			
7.		Write about the Assessment of Impact of Development Activities on Vegetation?	14M	CO4	L3
		(OR)			
8.		What are the Causes and Effects of Deforestation?	14M	CO4	L1
		UNIT-V			
9.		Elaborately explain The Environmental Protection Act?	14M	CO5	L6
		(OR)			
10.		Demonstrate about The Water Prevention Act ?	14M	CO5	L2

Q.P. Code: 1801705

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Sanitary & Solid Waste Management (CE)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Define the terms Sewage and Sullage?	7M	CO1	L1
	(b)	Discuss the Drop Manholes with neat sketch?	7M	CO1	L6
		(OR)			
2.	(a)	Summarize the merits and demerits of combined sewers?	7M	CO1	L2
	(b)	Explain about Manholes with neat sketches?	7M	CO1	L5
		UNIT – II			
3.	(a)	What are the Objectives of Sewage Characterization?	7M	CO2	L1
	(b)	How the sewage sampling is done?	7M	CO2	L1
		(OR)			
4.	(a)	Write short notes on Grit Chamber?	7M	CO2	L1
	(b)	Briefly explain about types of screens, in detail?	7M	CO2	L2
		UNIT – III			
5.	(a)	Write the importance and necessity of secondary treatment?	7M	CO3	L5
	(b)	Summarize about aerated lagoons with neat sketch?	7M	CO3	L2
		(OR)			
6.	(a)	Write the principles of biological treatment of sewage, in detail?	7M	CO3	L1
	(b)	Illustrate Oxidation Ponds with neat sketch?	7M	CO3	L2
		UNIT – IV			
7.	(a)	Draw the neat sketch of a septic tank, and explain its working?	7M	CO4	L6
	(b)	Explain the sludge dewatering practices?	7M	CO4	L2
		(OR)			
8.	(a)	List the objectives of tertiary treatment?	7M	CO4	L4
	(b)	Summarize the various sludge disposal practices?	7M	CO4	L2
		UNIT-V			
9.	(a)	What are the sources and characteristics of solid wastes?	7M	CO5	L1
	(b)	Discuss the sources and effects of air pollution, in detail?	7M	CO5	L6
		(OR)			
10.	(a)	Elaborately explain the management of sanitary landfills?	7M	CO5	L6
	(b)	What are the sources and effects of noise pollution?	7M	CO5	L1

Q.P. Code: 1825701

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Project Management (EEE)

Time: 3 Hours | Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.		What are the technical aspects of a typical project as distinct from commercial, financial, economic and managerial feasibility?	14M	CO1	L1
		(OR)			
2.	(a)	Discuss in detail about Project breakeven point?	7M	CO1	L6
	(b)	What are the principles of project management?	7M	CO1	L1
		UNIT – II			
3.		What factors and issues need to be considered in financial and economic evaluation of project?	14M	CO2	L1
		(OR)			
4.	(a)	What is Accounting rate of return method and explain its limitations?	7M	CO2	L1
	(b)	Explain the procedure to calculate accounting rate of return?	7M	CO2	L2
		UNIT – III			
5.		What is risk management and explain the types of risk management?	14M	CO3	L1, L2
		(OR)			
6.		What is breakeven analysis and explain the strengths and weaknesses of BEP analysis?	14M	CO3	L1, L2
		UNIT – IV			
7.		Define events and activities in the context of a network analysis. With the help of an example, explain the critical path and slack in the network.	14M	CO4	L5
		(OR)			
8.	(a)	What is project crashing explain with example?	7M	CO4	L1
	(b)	What are the pros and cons of project crashing?	7M	CO4	L1
		UNIT-V			
9.		What are the objectives of project management information systems?	14M	CO5	L1
		(OR)			
10.		What are the commonly available project management software packages? Briefly describe the features of Microsoft Project Management Software.	14M	CO5	L1

Q.P. Code: 1802702 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Utilization of Electrical Power (EEE)

Time: 3 Hours | Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	With a neat diagram, explain the construction and working of Mercury vapour lamp.	8M	CO1	L1
	(b)	A room with an area of 6 × 9 m is illustrated by ten 80-W lamps. The luminous efficiency of the lamp is 80 lumens/W and the coefficient of utilization is 0.65. Find the average illumination	6M	CO1	L1
		(OR)			
2.	(a)	Discuss the flood lighting with suitable diagrams.	6M	CO1	L6
	(b)	Two similar lamps having uniform intensity 500 CP in all directions below the horizontal are mounted at a height of 4 m. What must be the maximum spacing between the lamps so that the illumination on the ground midway between the lamps shall be at least one-half the illuminations directly under the lamps?	8M	CO1	L1
		UNIT – II			
3.	(a)	What is electric heating? What are the advantages over other methods of heating?	6M	CO2	L1
	(b)	Explain the construction and operation of Ajax Wyatt furnace.	8M	CO2	L2
		(OR)			
4.	(a)	Compare flash and upset butt welding?	8M	CO2	L5
	(b)	Write a note on A.C welding set & D.C. welding set?	6M	CO2	L1
		UNIT – III			
5.	(a)	What is an electric drive? What are its advantages? Compare a group drive and an individual drive.	7M	CO3	L1
	(b)	Explain the various factors that affect the final temperature rise of a motor on load?	7M	CO3	L2
		(OR)			
6.	(a)	Through a.c is superior to d.c for electric drives, sometimes d.c. is referred. Give the reasons and mention some of the applications	8M	CO3	L2
	(b)	Explain the load equalization in detail.	6M	CO3	L2
		UNIT – IV			
7.	(a)	Discuss various factors which are taken into account while deciding the changeover from existing system of electrification to a new system of electrification.	8M	CO4	L6
	(b)	Why DC series motor is ideally suited for traction services?	6M	CO4	L1
		(OR)			
8.	(a)	Explain the different methods of the electric braking of the three-phase induction motor.	7M	CO4	L2
	(b)	A DC series motor drives a load. The motor takes a current of 13 A and the speed is 620 rpm. The torque of the motor varies as the square of speed. The field winding is shunted by a diverter of the same resistance as that of the field winding, then determine the motor speed and current. Neglect all motor losses and assume that the magnetic circuit is unsaturated	7M	CO4	L5
		UNIT-V			
9.	(a)	Explain briefly the tractive effort required, while the train is moving up the gradient and down the gradient.	8M	CO5	L2
	(b)	What are factors affecting specific consumption.	6M	CO5	L1
		(OR)			
10.	(a)	The speed–time curve of train carries of the following parameters: (i) Free running for 12 min. (ii) Uniform acceleration of 6.5 kmphp for 20 s. (iii) Uniform deceleration of 6.5 kmphp to stop the train. (iv) A stop of 7 min. Then, determine the distance between two stations, the average, and the schedule speeds.	14M	CO5	L5

Q.P. Code: 1802703

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Flexible AC Transmission Systems (EEE)

Time: 3 Hours

Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Explain the need for interconnection of Power systems	7M	CO1	L2
	(b)	What are the parameters that control power flow in AC systems? Explain their relative importance	7M	CO1	L4
		(OR)			
2.	(a)	Briefly explain about the basic types of FACTS controllers and also discuss the importance of different types of FACTS controllers.	7M	CO1	L3
	(b)	Discuss in brief, the benefits from FACTS controllers.	7M	CO1	L2
		UNIT – II			
3.	(a)	Derive the fundamental and RMS voltage harmonics for square wave single phase bridge converter.	7M	CO2	L3
	(b)	Explain about the transformer connection for 12 pulse output.	7M	CO2	L2
		(OR)			
4.	(a)	Explain the pulse width modulation converter with neat circuit diagram and waveforms.	7M	CO2	L2
	(b)	Give comparisons between voltage source and current source inverters.	7M	CO2	L2
		UNIT – III			
5.	(a)	Explain how shunt compensation will improve the transient stability of power system	7M	CO3	L4
	(b)	Explain the functions of ideal midpoint reactive compensator	7M	CO3	L4
		(OR)			
6.	(a)	Explain the methods of controllable VAR generation	7M	CO3	L2
	(b)	Why switching type converter generate and absorb reactive power? Explain one VAR generator with relevant control scheme.	7M	CO3	L4
		UNIT – IV			
7.	(a)	Explain the operation of a STATCOM with the help of a neat diagram	7M	CO4	L2
	(b)	What are the advantages of slope in the dynamic characteristics of SVC	7M	CO4	L4
		(OR)			
8.	(a)	Explain with the help of a block diagram representation, how the STATCOM is implemented for power oscillation damping during a disturbance.	7M	CO4	L3
	(b)	What are the main components of complete control operation of a static compensators? Explain them.	7M	CO4	L2
		UNIT-V			
9.	(a)	Explain the operation of GTO Thyristor-controlled series capacitor?	7M	CO5	L2
	(b)	Explain the improvement of power oscillation damping by using series capacitive compensation?	7M	CO5	L4
		(OR)			
10.		Discuss the control schemes employed for GCSC, TSSC and TCSC?	14M	CO5	L3

Q.P. Code: 1803701

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: CAD / CAM (ME)

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

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.		Describe the steps involved in computer-aided design using a block diagram.	14M	CO1	L2
		(OR)			
2.		Write in detail about Computer peripherals for CAD	14M	CO1	L2
		UNIT – II			
3.		How do you generate a line? List out the methods and explain any one in detail.	14M	CO2	L3
		(OR)			
4.		Write short note on 2D and 3D transformations of (i) Translation (ii) scaling (iii) rotation (iv) reflection	14M	CO2	L2
		UNIT – III			
5.	(a)	Write base difference between analytical and synthetic curves	5M	CO3	L2
	(b)	Describe Hermite cubic curve in detail.	9M	CO3	L2
		(OR)			
6.	(a)	What are the differences between B-Rep and CSG in solid modeling?	4M	CO3	L3
	(b)	Write steps to Construction the CSG solid model.	10M	CO3	L3
		UNIT – IV			
7.		What is meant by a Part family in Group Technology and Discuss any one method with an example.	14M	CO4	L2
		(OR)			
8.		Explain the following term which are used in FMS in detail (i) Workstations (ii) Material handling system (iii) Computer control	14M	CO4	L2
		UNIT-V			
9.		What do you mean a process planning? List out various CAPPs and explain variant CAPP with help of block diagram.	14M	CO5	L2
		(OR)			
10.	(a)	What does the automatic identification technique concept involve? What are the benefits of it?	5M	CO5	L2
	(b)	Illustrate the concept of MRP mention its inputs and out puts?	9M	CO5	L2

Q.P. Code: 1803702 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Finite Element Methods (ME)

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

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

			Marks	CO	BL
		UNIT - I			
1.		Solve the differential equation for a physical problem expressed as $d^2y/dx^2 + 100 = 0$, $0 \le x \le 10$ where boundary conditions as y (0) = 0 and y (10) = 0 using the trial function $y = a_1x\ (10-x)$ find the value of the parameters a_1 by the following methods. (i) Least squares method and (ii) Galerkin method.	14M	CO1	L3
		(OR)			
2.	(a)	Define FEM and write its merits and Demerits when compared with other methods	7M	CO1	L1
	(b)	List the various Applications of FEM in different field of engineering.	7M	CO1	L4
		UNIT – II			
3.		A load P = 60 KN is applied on a bar as shown in Figure. Determine (i) Nodal Displacement field (ii) Stresses	14M	CO2	L5

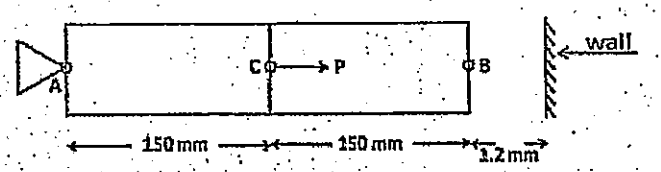
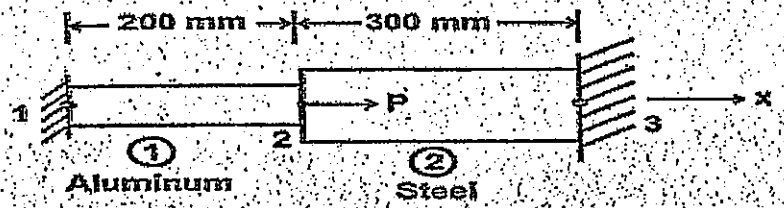


Figure.3(b)

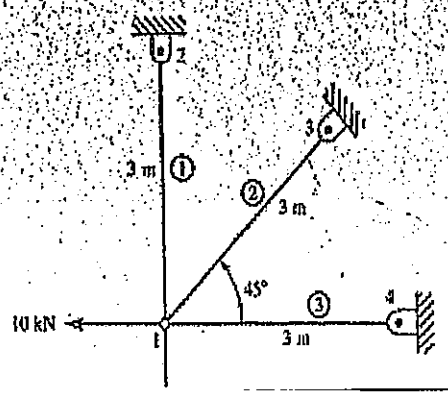
Take E= 20GPa, Gap=1.2mm, A=250mm^2

(OR)

4.		An Axial Load P of 300 KN is applied at 20^0 C to the Rod as shown in fig, The Temperature is than raised to 90^0 C. i) Evaluate the Global stiffness matrix and Global Load vector. ii) Determine the Nodal Displacements and Elemental stresses. Take Young's modulus for Steel = 200GPa and Aluminum = 70GPa, Cross sectional Area of steel =1300 mm2 and Aluminum = 1000 mm2 , thermal expansion coefficient for Steel = 11.7 X 10^{-6} / ^{0}c and Aluminum = 23 X 10^{-6} / ^{0}C	14M	CO2	L5



		UNIT – III			
5.		Formulate and derive the Stiffness and load matrix for a 2 noded beam element.	14M	CO3	L6
		(OR)			
6.		For the plane trusses shown in below figure, Determine the horizontal and vertical displacements of node 1 and the stresses in each element. All elements have E = 210 GPa and A= 4.0 X 10^{-4} m^2.	14M	CO3	L5

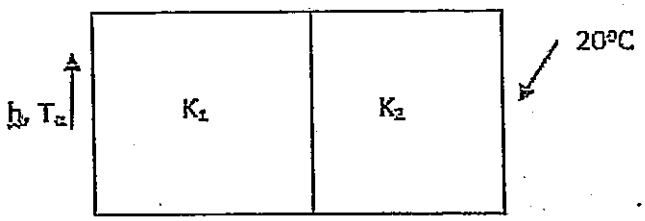


UNIT – IV

7.		Formulate and Derive the Strain displacement Relationship and stiffness matrix for a 4 noded Iso-Parametric Element.	14M	CO4	L5
		(OR)			
8.	(a)	Define Iso, Sub & Super – Parametric Elements	7M	CO4	L4
	(b)	Derive the Shape functions of CST Element	7M	CO4	L4

UNIT-V

9.		Determine the temperature distribution through the composite wall shown in figure when convective heat loss occurs on the left surface. Assume unit area. Thickness t1 = 4cm, t2 = 2cm, K1 = 0.5W/cm K, K2 = 0.05W/cm K, Tα = -5 ^{0}C, h = 0.1 W/cm2 K.	14M	CO5	L5



(OR)

10.		Illustrate an Aluminum Alloy Fin of 7 mm thick and 50 mm long protrudes from a Wall, which is Maintained at 120°C, The Ambient Air Temperature 22°C, The Heat Transfer coefficient and Thermal conductivity of the fin material are 140 W/m^2 K and 55 W/m k Respectively. Determine the Temperature Distribution of fin	14M	CO5	L

Q.P. Code: 1803703

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Quality Engineering & Management (ME)

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

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Define quality. Select a product and describe how the dimensions of quality influence its acceptance	7M	CO1	L2
	(b)	Explain the concept of optimum cost of quality	7M	CO1	L3
		(OR)			
2.		What is cost of quality? Describe the categories and elements of quality costs in detail.	14M	CO1	L1
		UNIT – II			
3.		List The Tolerance Design? Explain determination of tolerance of any one type	14M	CO2	L2
		(OR)			
4.	(a)	Does an np-chart provide any different information than p chart? Why an np-chart be used?	5M	CO2	L3
	(b)	What do you mean by process capability? What is the significance of normal curve in quality control? Explain.	9M	CO2	L2
		UNIT – III			
5.	(a)	Discuss the steps in constructing X and P chart	7M	CO3	L1
	(b)	Describe various types of Quality loss function.	7M	CO3	L1
		(OR)			
6.	(a)	Difference between attribute and variable characteristics	7M	CO3	L2
	(b)	What is quality loss function ?Explain	7M	CO3	L3
		UNIT – IV			
7.		Explain the various steps involved in building house of quality by selecting suitable example.	14M	CO4	L3
		(OR)			
8.	(a)	Write short notes on quality circles.	7M	CO4	L3
	(b)	Explain the various steps involved in building house of quality by selecting suitable example.	7M	CO4	L3
		UNIT-V			
9.		A real estate firm evaluates incoming selling agreement forms using the sampling plan N=1500, n=110, and c=3. (i) Construct the OC curve using about 7 points. (ii) Determine the AOQ curve and the AOQL.	14M	CO5	L3
		(OR)			
10.	(a)	What is reliability? Explain evaluation of design test by Waybill method	7M	CO5	L2
	(b)	Describe the use of maintainability and availability in reliability engineering	7M	CO5	L2

Q.P. Code: 1803704

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Production and Operation Management (ME)(PE – III)

Time: 3 Hours Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	What is production and operations management? Make an overview about production and operations management.	7M	CO1	L1
	(b)	Define production system and list the types of production system.	7M	CO1	L1
		(OR)			
2.	(a)	Explain in brief the objectives of production and operations management?	7M	CO1	L1
	(b)	Discuss about Mass production system and Batch production system.	7M	CO1	L2
		UNIT – II			
3.	(a)	What is forecasting, list the types of forecasting and their uses	7M	CO2	L1
	(b)	Explain difference between Mean square error and Standard deviation.	7M	CO2	L4
		(OR)			
4.	(a)	Explain linear regression method?	7M	CO2	L1
	(b)	The data given below refers to past sales for last 9 years, using the least squares, estimate sales forecast for the next 2 years	7M	CO2	L5

Year	1	2	3	4	5	6	7	8	9
Sales	35	50	48	47	50	55	60	65	73

		UNIT – III			
5.	(a)	What is layout planning? Explain the different types of layouts.	7M	CO3	L1
	(b)	What is Line Balancing? Why it is used?	7M	CO3	L1
		(OR)			
6.	(a)	What are the factors to be considered in the location of facilities?	7M	CO3	L2
	(b)	Explain Ranked position weight technique.	7M	CO3	L1
		UNIT – IV			
7.	(a)	Explain what is meant by the Economic Order Quantity.	7M	CO4	L1
	(b)	The annual demand for an item is 3600 units. The item unit cost is Rs. 8/-. The inventory carrying cost is 20% per annum per unit. The cost of one procurement is Rs.120/-. Determine: (i) EOQ (ii) Number of orders per year (iii) Total annual cost.	7M	CO4	L5
		(OR)			
8.	(a)	What is PERT and CPM. Mention the applications of PERT and CPM.	7M	CO4	L1
	(b)	Briefly explain the rules for drawing network diagram of PERT and CPM.	7M	CO4	L2
		UNIT-V			
9.	(a)	Explain the objectives of scheduling and methods used in scheduling.	7M	CO5	L2
	(b)	Explain Gantt Chart and Capacity Planning in detail with examples.	7M	CO5	L2
		(OR)			
10.	(a)	Define MRP and with a block diagram, explain various inputs and outputs of MRP system?	7M	CO5	L1
	(b)	A work centre operates 6 days a week on two shifts per day basis (8hrs/shift). It has four machines with the same capacity. If the machines are utilised 75% of the time at a system efficiency of 90%, what is the rated output in standard hours/week?	7M	CO5	L5

Q.P. Code: 1804701

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Internet of Things (ECE)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Outline the architecture of IoT	7M	CO1	L2
	(b)	Highlight the challenges in IoT.	7M	CO1	L2
		(OR)			
2.	(a)	Describe the functional blocks of IoT	7M	CO1	L2
	(b)	Present the latest trends and applications in which IoT is used	7M	CO1	L2
		UNIT – II			
3.	(a)	Emphasize on TCP/IP protocol	7M	CO2	L2
	(b)	Detail about WiFi Library	7M	CO2	L2
		(OR)			
4.	(a)	Explain about TCP & UDP communication	7M	CO2	L2
	(b)	Explain about IPV4	7M	CO2	L2
		UNIT – III			
5.	(a)	Analyze the details of MSP432 architecture	7M	CO3	L2
	(b)	Present the blocks of CC3220 SF launch pad	7M	CO3	L2
		(OR)			
6.	(a)	Emphasize on booster packs of MSP 432 processor	7M	CO3	L2
	(b)	Elaborate about libraries of TM4C123G processor	7M	CO3	L2
		UNIT – IV			
7.	(a)	Analyze the role of IoT in cloud communication	7M	CO4	L4
	(b)	Analyze the data processing in clouds like blynk	7M	CO4	L4
		(OR)			
8.	(a)	Interpret the case study of bio-inspired sensing	7M	CO4	L4
	(b)	Justify the basics of any one selected cloud	7M	CO4	L4
		UNIT-V			
9.	(a)	Analyze the IoT applications in home security	7M	CO5	L4
	(b)	Analyze the IoT role in transport	7M	CO5	L4
		(OR)			
10.	(a)	Analyze the IoT operations in Medical field	7M	CO5	L4
	(b)	Analyze the IoT operations in home infrastructure	7M	CO5	L4

Q.P. Code: 1804702 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Electronic Measurements & Instrumentation (ECE)

Time: 3 Hours | Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Explain in detail about the static and dynamic characteristics of measuring instruments	7M	CO1	L2
	(b)	Explain the working of RF wave analyzer with neat block diagram	7M	CO1	L2
		(OR)			
2.	(a)	Construct and explain the AC voltmeter	7M	CO1	L2
	(b)	Explain the operation of DC differential voltmeter	7M	CO1	L2
		UNIT – II			
3.	(a)	Draw the circuit of Kelvin bridge and explain its operation	7M	CO2	L2
	(b)	With the help of Maxwell's bridge circuit, explain how unknown inductance is measured?	7M	CO2	L2
		(OR)			
4.	(a)	Describe the working of Schering bridge and derive the equations for capacitance	7M	CO2	L4
	(b)	Draw the circuit of a basic Q-meter diagram and explain its principal of operation	7M	CO2	L2
		UNIT – III			
5.	(a)	Differentiate Dual beam and Dual trace CRO'S?	7M	CO3	L4
	(b)	Discuss the operation of digital storage oscilloscope with neat block diagram?	7M	CO3	L5
		(OR)			
6.	(a)	Draw the block diagram of basic CRO and explain the function of each block in detail	7M	CO3	L2
	(b)	Justify Why delay line is required in vertical section of CRO?	7M	CO3	L2
		UNIT – IV			
7.	(a)	With neat sketch explain the working dual slope digital voltmeters.	7M	CO4	L2
	(b)	Draw the schematic block diagram of digital multi meter	7M	CO4	L4
		(OR)			
8.	(a)	Illustrate the circuit diagram of digital phase meter and explain its working	7M	CO4	L2
	(b)	With block diagram explain the operation of "Ramp type' digital voltmeter	7M	CO4	L2
		UNIT-V			
9.	(a)	What is the use of LVDT? Discuss its basic principle of operation.	7M	CO5	L4
	(b)	Discuss about Data Acquisition Systems	7M	CO5	L5
		(OR)			
10.	(a)	Distinguish between the active & passive transducers	7M	CO5	L5
	(b)	Explain the working of piezoelectric transducer?	7M	CO5	L2

Q.P. Code: 1804706

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: CMOS Design (ECE)(PE – II)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Explain the DC transfer characteristics of complementary CMOS inverter and mark all the regions of operation with necessary expressions for V_{out} in each region.	7M	CO1	L4
	(b)	Discuss about static load inverters.	7M	CO1	L6
		(OR)			
2.	(a)	Write short notes on differential inverter.	7M	CO1	L3
	(b)	Determine the operation of tri state inverter with neat diagram.	7M	CO1	L2
		UNIT – II			
3.	(a)	Explain the resistance estimation for non-rectangular.	7M	CO2	L6
	(b)	Elaborate CMOS transistor sizing.	7M	CO2	L6
		(OR)			
4.		Explain power analysis in CMOS circuit.	14M	CO2	L4
		UNIT – III			
5.	(a)	Elaborate different logic gate design issues.	7M	CO3	L4
	(b)	Discuss the physical design of CMOS inverter and NAND gates.	7M	CO3	L6
		(OR)			
6.	(a)	Explain clocking strategies of clocked systems briefly.	7M	CO3	L2
	(b)	Discuss about Low power design in logic design.	7M	CO3	L5
		UNIT – IV			
7.	(a)	Explain CMOS chip design options.	7M	CO4	L2
	(b)	Write short notes on design verification tools.	7M	CO4	L4
		(OR)			
8.		Explain the following (i) Chip level techniques (ii) System level techniques	14M	CO4	L2
		UNIT-V			
9.	(a)	Design a four bit parity generator and draw schematic of it.	7M	CO5	L6
	(b)	Discuss about the design of ALU sub system with suitable figure.	7M	CO5	L5
		(OR)			
10.	(a)	Explain high density memory systems.	7M	CO5	L7
	(b)	What is SRAM and DRAM. Compare.	7M	CO5	L7

Q.P. Code: 1804710 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Digital Image & Video Processing (ECE)(PE – III)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Describe about image sampling and quantization?	7M	CO2	L3
	(b)	List and explain applications of Digital image processing?	7M	CO1	L2
		(OR)			
2.	(a)	Draw the block diagram and explain each block of fundamental steps in Digital Image Processing?	7M	CO2	L2
	(b)	What are neighbors of pixel, adjacency and connectivity?	7M	CO5	L1
		UNIT – II			
3.	(a)	What is mean by image enhancement and explain image point processing methods?	7M	CO3	L2
	(b)	Compare spatial domain filters used for image smoothing and image sharpening?	7M	CO2	L4
		(OR)			
4.	(a)	State and prove any two properties of 2D DFT?	7M	CO3	L5
	(b)	Explain the process of Homomorphic filtering with neat sketch?	7M	CO3	L2
		UNIT – III			
5.	(a)	Define redundancy? Also explain inter pixel and psycho visual redundancies?	7M	CO2	L1
	(b)	Explain the function of each block in image compression model?	7M	CO5	L3
		(OR)			
6.	(a)	Briefly discuss Lossless and Lossy Predictive coding?	7M	CO2	L6
	(b)	List and explain various image compression standards	7M	CO2	L1
		UNIT – IV			
7.	(a)	What is image degradation model? Also list various causes for image degradation?	7M	CO2	L3
	(b)	What is Wiener filter? Analyze filtering with suitable expressions?	7M	CO5	L4
		(OR)			
8.	(a)	How image gradient is useful in edge detection. Explain?	7M	CO5	L5
	(b)	Explain the image segmentation by using Region growing?	7M	CO5	L2
		UNIT-V			
9.	(a)	Define video signal and explain Analog video and Digital video?	7M	CO1	L1
	(b)	Explain various video formats?	7M	CO2	L2
		(OR)			
10.	(a)	Explain block matching motion estimation algorithm?	7M	CO3	L2
	(b)	Discuss gradient techniques motion estimation?	7M	CO5	L6

Q.P. Code: 1805701 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Machine Learning (CSE)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	What are various steps involved in designing of learning system. Explain with an example?	7M	CO1	L1
	(b)	Compare and contrast classification with regression with examples?	7M	CO1	L4
		(OR)			
2.	(a)	Write and explain about Parametric and Non-Parametric Machine Learning algorithms?	7M	CO1	L2
	(b)	List and explain the various applications of Machine Learning?	7M	CO1	L4
		UNIT – II			
3.	(a)	What is a decision tree? Draw a sample diagram and write the steps how to interpret a decision tree.	7M	CO2	L1, L2
	(b)	What are the major issues in designing a decision tree? Suggest the possible solutions.	7M	CO2	L5
		(OR)			
4.	(a)	Write the basic decision tree algorithm. Illustrate it with suitable example.	7M	CO2	L2
	(b)	Explain how hypothesis space search is carried in decision tree learning.	7M	CO2	L4
		UNIT – III			
5.	(a)	Define Instance-based learning. What are the different types of instance-based learning methods?	7M	CO3	L1
	(b)	Give the importance of feature selection. Explain any one feature selection method with example?	7M	CO3	L1, L4
		(OR)			
6.	(a)	Explain about k-nearest neighbor algorithm with example?	7M	CO3	L2
	(b)	What is Dimensionality Reduction. Explain Principal Component Analysis.	7M	CO3	L1, L4
		UNIT – IV			
7.	(a)	What are the assumptions made with naive Baye's classifier? Explain each term in naïve Baye's classifier	7M	CO4	L1, L4
	(b)	Describe about Logistic Regression with example?	7M	CO4	L2
		(OR)			
8.	(a)	What is Maximum Likelihood Estimation? Give the diagrammatical representation of MLE.	7M	CO4	L1, L4
	(b)	What is the motivation behind in Support Vector Machine. Explain with example?	7M	CO4	L1, L4
		UNIT-V			
9.	(a)	Write brief note on Hierarchical clustering.	7M	CO5	L2
	(b)	Find the three clusters after one epoch (iteration) for the following eight examples using the k-means algorithm and Euclidean distance. A1=(2,10), A2=(2,5), A3=(8,4), A4=(5,8), A5=(7,5), A6=(6,4), A7=(1,2), A8=(4,9).	7M	CO5	L3
		(OR)			
10.	(a)	Compare and contrast bagging and boosting	7M	CO5	L4
	(b)	Explain in detail about Random Forest algorithm with example?	7M	CO5	L2

Q.P. Code: 1805702

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Big Data Technologies (CSE)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	With a neat sketch, explain the basic building blocks of Hadoop.	7M	CO1	L4
	(b)	What is meant by Grid Computing? Explain the brief history of Hadoop.	7M	CO1	L3
		(OR)			
2.	(a)	Explain the terminologies used in the big data environments.	7M	CO1	L3
	(b)	Give a brief note on Data Science.	7M	CO1	L1
		UNIT – II			
3.	(a)	Illustrate the Anatomy of a file write.	7M	CO2	L3
	(b)	Discuss the Parallel copying with distcp.	7M	CO2	L4
		(OR)			
4.	(a)	Explain the Replica placement and Coherency Model	7M	CO2	L2
	(b)	Describe the Java Interface to Hadoop.	7M	CO2	L3
		UNIT – III			
5.		Examine the different ways of sorting datasets and how you can control the sort order in Map Reduce.	14M	CO3	L4
		(OR)			
6.	(a)	Write the Analyzing data with Unix tools.	7M	CO3	L1
	(b)	Illustrate the Running a distributed MapReduce job.	7M	CO3	L2
		UNIT – IV			
7.		List and explain the main components of MapReduce job.	14M	CO4	L4
		(OR)			
8.		Explain the Shuffle and sort in map reduce with neat diagram	14M	CO4	L3
		UNIT-V			
9.	(a)	Discuss the various file formats supported by HIVE	7M	CO5	L3
	(b)	Elaborate the Java and Map reduce clients,.	7M	CO5	L2
		(OR)			
10.		Explain the Working through the ABCs of Pig Latin.	14M	CO5	L2

Q.P. Code: 1805705

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Cloud Computing (CSE)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Discuss about cloud computing and cluster computing	7M	CO1	L2
	(b)	Explain about cloud eco system	7M	CO1	L2
		(OR)			
2.	(a)	Elaborate about cloud service offering models	7M	CO1	L2
	(b)	List requirements for cloud services and explain	7M	CO1	L1
		UNIT – II			
3.	(a)	Discuss about Network Connectivity in Cloud Computing	7M	CO2	L2
	(b)	What is migration explain about phases of cloud migration	7M	CO2	L2
		(OR)			
4.	(a)	Discuss about cloud applications	7M	CO2	L2
	(b)	What are the different type cloud deployment models discuss them	7M	CO2	L2
		UNIT – III			
5.		Illustrate cloud service models and explain them in brief.	14M	CO3	L3
		(OR)			
6.		What are the different type cloud deployment models discuss them	14M	CO3	L2
		UNIT – IV			
7.	(a)	Discuss about cloud application development platforms	7M	CO4	L2
	(b)	Explain about multitenant architecture in cloud aware software	7M	CO4	L2
		(OR)			
8.		List and explain new challenges of software development in cloud.	14M	CO4	L2
		UNIT-V			
9.	(a)	Discuss about Architecture of Classical Data Centres and Storage and Networking Infrastructure	7M	CO5	L2
	(b)	Discuss about networking issues in Data centers.	7M	CO5	L2
		(OR)			
10.		Discuss in detail about Google cloud service provider.	14M	CO5	L2

Q.P. Code: 18OE103

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Building Technology (OE - II)

Time: 3 Hours

Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Discuss about the various tests on bricks.	7M	CO1	L2
	(b)	Discuss about paints and varnishes.	7M	CO1	L2
		(OR)			
2.	(a)	Write about the chemical composition of ordinary Portland cement and explain its influence on strength properties of cement.	9M	CO1	L2
	(b)	Describe about the bulking of sand.	5M	CO1	L2
		UNIT – II			
3.	(a)	What are the advantages and disadvantages of reinforced cement concrete?	7M	CO2	L2
	(b)	Define ready mix concrete. What are the merits and demerits with ready mixed concrete?	7M	CO2	L2
		(OR)			
4.	(a)	Write short notes on mineral admixtures.	7M	CO2	L2
	(b)	Write short notes on chemical admixtures.	7M	CO2	L2
		UNIT – III			
5.		Discuss about the various types of foundation with neat sketches.	14M	CO3	L2
		(OR)			
6.	(a)	What is a damp proof course? What are the benefits with damp proof course?	7M	CO3	L2
	(b)	What are the various types of bonds in brick masonry? Explain about any one type.	7M	CO3	L2
		UNIT – IV			
7.	(a)	Discuss about the various components of a framed structure.	7M	CO4	L2
	(b)	What is a lintel? Where and when lintels are used?	7M	CO4	L2
		(OR)			
8.	(a)	Discuss about the various types of staircases. What are the typical ranges for the tread and riser of a staircase?	7M	CO4	L2
	(b)	List out the various components of doors and windows.	7M	CO4	L2
		UNIT-V			
9.	(a)	Write short notes on distempering.	7M	CO5	L2
	(b)	Write in detail about the types of plastering.	7M	CO5	L2
		(OR)			
10.	(a)	Write about the significance of good water and sanitary arrangements in a building.	7M	CO5	L2
	(b)	Explain the procedure to be followed for painting the external walls and internal walls of a building.	7M	CO5	L2

Q.P. Code: 18OE203 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Energy Conversion Systems (OE - II)

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

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

			Marks	CO	BL
		UNIT - I			
1.		Explain solar configurations with neat diagrams.	14M	CO1	L2
		(OR)			
2.		Explain practical performance of solar cell with neat diagrams.	14M	CO1	L2
		UNIT – II			
3.		Describe with a neat sketch the working of a wind energy system with main components.	14M	CO2	L2
		(OR)			
4.		Develop an expression of power extracted from wind turbine.	14M	CO2	L3
		UNIT – III			
5.		Explain the modes of operation of tidal project.	14M	CO3	L2
		(OR)			
6.		Explain the types of Ocean thermal energy conversion system with neat sketch.	14M	CO3	L2
		UNIT – IV			
7.		Explain the Biomass conversion system with neat diagram.	14M	CO4	L2
		(OR)			
8.	(a)	Explain about seeback effect in thermo electric energy conversion system.	7M	CO4	L2
	(b)	Explain about peltier cooling in thermo electric generator.	7M	CO4	L2
		UNIT-V			
9.		Explain the principles of EMF generation in fuel cells.	14M	CO5	L2
		(OR)			
10.		Explain about environmental effects of energy conversion system.	14M	CO5	L2

Q.P. Code: 18OE303

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Industrial Safety & Management (OE - II)

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

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Define accidents. List the main reasons for accidents.	7M	CO1	L1
	(b)	Describe the nature and causes of accidents.	7M	CO1	L3
		(OR)			
2.	(a)	Explain about Accident and Loss Statistics.	7M	CO1	L2
	(b)	Mention any six unsafe acts and unsafe conditions that lead to industrial accidents.	7M	CO1	L1
		UNIT – II			
3.	(a)	Derive an expression for dispersion of a toxic gas under steady state continuous point release with no wind.	7M	CO2	L4
	(b)	Discuss about the Dense Gas Dispersion.	7M	CO2	L2
		(OR)			
4.	(a)	Write a short note on Hygiene Evaluation and Hygiene Control.	7M	CO2	L3
	(b)	List and explain the fundamental principles of industrial hygiene.	7M	CO2	L2
		UNIT – III			
5.	(a)	Explain the terms flash point, ignition temperature, fire point.	7M	CO3	L1
	(b)	Draw a 'Fire Triangle' and explain main components of fire.	7M	CO3	L3
		(OR)			
6.	(a)	Classify fire extinguishers. Explain with a neat sketch carbon-dioxide fire extinguisher.	7M	CO3	L2
	(b)	How do explosions differ from fires? Explain.	7M	CO3	L4
		UNIT – IV			
7.	(a)	State the types of hazards and explain any three in detail with possible causes and remedial actions.	7M	CO4	L3
	(b)	Define hazards. List common hazards associated with chemical and petrochemical industries.	7M	CO4	L2
		(OR)			
8.	(a)	Write a short note on Hazard and Operability (HAZOP) Analysis.	8M	CO4	L5
	(b)	Discuss the advantages and disadvantages of Hazard and Operability (HAZOP) Analysis.	6M	CO4	L1
		UNIT-V			
9.	(a)	Briefly explain about Fault Tree Analysis (FTA).	8M	CO5	L3
	(b)	Explain the merits and limitations of Fault Tree Analysis.	6M	CO5	L1
		(OR)			
10.	(a)	Describe the accident investigation process with purpose.	7M	CO5	L2
	(b)	Discuss the various principle concepts for constructing Fault Tree.	7M	CO5	L3

Q.P. Code: 18OE304 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Smart Materials (OE - II)

Time: 3 Hours | Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Illustrate properties of piezoelectric materials.	7M	CO1	L2
	(b)	Lable and explain applications of piezoelectric materials.	7M	CO1	L1
		(OR)			
2.	(a)	What are the properties of electro-resistive materials?	7M	CO1	L4
	(b)	Explain applications of magneto-resistive materials.	7M	CO1	L2
		UNIT – II			
3.	(a)	What are the characteristics of Fiber-Optic sensors?	7M	CO2	L1
	(b)	With neat sketch explain fiber optic strain sensor	7M	CO2	L2
		(OR)			
4.	(a)	Differentiate between Twisted and Braided fiber optic sensors.	7M	CO2	L2
	(b)	Explain fiber optics in crack detection application with microscopic diagram.	7M	CO2	L2
		UNIT – III			
5.	(a)	With neat sketch explain any four smart sensors.	7M	CO3	L4
	(b)	Explain force actuators and power actuator with neat labeled diagram.	7M	CO3	L2
		(OR)			
6.	(a)	Illustrate fluidic pumps with neat sketch.	7M	CO3	L4
	(b)	What is transducer and explain ultrasonic transducer with microscopic diagram.	7M	CO3	L2
		UNIT – IV			
7.	(a)	List and explain applications of Shape Memory Alloys (SMA).	7M	CO4	L3
	(b)	What is shape memory polymer and explain its functional mechanism.	7M	CO4	L3
		(OR)			
8.	(a)	Classify shape memory alloys?	7M	CO4	L4
	(b)	List types and applications of shape memory polymers.	7M	CO4	L2
		UNIT-V			
9.	(a)	Explain MEMS BP sensors actuator with neat labeled diagram.	7M	CO5	L2
	(b)	What is accuracy, repeatability and reliability.	7M	CO5	L1
		(OR)			
10.	(a)	Describe the role of MEMS in product development.	7M	CO5	L2
	(b)	Explain market uncertainties.	7M	CO5	L3

Q.P. Code: 18OE404

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Principles of Communication (OE - II)

Time: 3 Hours Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Define radio broadcasting and how does radio broadcasting system works.	7M	CO1	L1
	(b)	What is computer network? Explain different types of computer networks	7M	CO1	L1
		(OR)			
2.	(a)	With neat diagram explain PSTN	7M	CO1	L2
	(b)	What is internet and list out advantages of internet	7M	CO1	L1
		UNIT – II			
3.	(a)	Define communication and explain the general communication system with neat diagram.	7M	CO2	L1
	(b)	Explain need for modulation and what are the advantages of modulation.	7M	CO2	L2
		(OR)			
4.	(a)	With neat waveforms explain AM, FM &PM	7M	CO2	L2
	(b)	Explain different types of communication channels.	7M	CO2	L2
		UNIT – III			
5.	(a)	What are the fundamental elements required designing of OFC system and explain.	7M	CO3	L1
	(b)	Explain different types of optical fibers.	7M	CO3	L2
		(OR)			
6.	(a)	List out the applications of long-distance transmission links.	7M	CO3	L4
	(b)	Explain different types of computer communication networks.	7M	CO3	L2
		UNIT – IV			
7.	(a)	With neat block diagram explain satellite communication link.	7M	CO4	L2
	(b)	What are the advantages of different types of satellite orbits.	7M	CO4	L1
		(OR)			
8.	(a)	Explain launching of satellite from earth station.	7M	CO4	L2
	(b)	What are applications of satellite and explain each.	7M	CO4	L1
		UNIT-V			
9.	(a)	What are the differences between 2G,3G cellular standards	7M	CO5	L1
	(b)	With neat block diagram explain generation of BPSK	7M	CO5	L2
		(OR)			
10.	(a)	Explain Bluetooth architecture with neat diagram	7M	CO5	L2
	(b)	What are the recent trends and developments in GSM	7M	CO5	L1

Q.P. Code: 18OE504 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Computer Networks (OE - II)

Time: 3 Hours | Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Explain the different topologies of the network.	7M	CO1	L2
	(b)	Explain about the Guided transmission Medias in computer networks.	7M	CO1	L2
		(OR)			
2.	(a)	Differentiate OSI reference model with the TCP/IP reference model.	7M	CO1	L4
	(b)	What is transmission impairment in Data Communication? What are the different types of transmission impairment?	7M	CO1	L1
		UNIT – II			
3.	(a)	Explain the following error detection techniques (i) LRC (ii) CRC.	7M	CO2	L2
	(b)	Explain flow control mechanism using Sliding window protocol.	7M	CO2	L2
		(OR)			
4.	(a)	What is the need of Framing? Explain character stuffing and bit stuffing for framing.	7M	CO2	L5
	(b)	Explain the working of CSMA Protocol.	7M	CO2	L4
		UNIT – III			
5.	(a)	What are the differences between Static Routing Algorithm and Dynamic Routing Algorithm?	7M	CO3	L4
	(b)	Explain Broadcast routing algorithm with an example.	7M	CO3	L2
		(OR)			
6.	(a)	Explain shortest path routing algorithm with an example.	7M	CO3	L2
	(b)	What is the format of IPv4 header? Describe the significance of each field.	7M	CO3	L2
		UNIT – IV			
7.	(a)	Write a detailed note on transport services.	7M	CO4	L4
	(b)	Draw and explain the header format for a user datagram protocol.	7M	CO4	L2
		(OR)			
8.	(a)	Explain flow control in transport layer in detail.	7M	CO4	L4
	(b)	What are the reasons for congestion? What are the problems with congestion?	7M	CO4	L5
		UNIT-V			
9.	(a)	What is DNS? What resource records are associated with it? Explain.	7M	CO5	L1
	(b)	Explain in detail about WWW.	7M	CO5	L2
		(OR)			
10.		Write about electronic mail in detail.	14M	CO5	L6

Q.P. Code: 18OE503

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Python Programming (OE – II)

Time: 3 Hours

Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Write a Python program that reads four integers from user, prints them with a single print statement, without any space or newline between/after the values.	7M	CO1	L1
	(b)	Show how an input and output function is performed in python with an example.	7M	CO1	L2
		(OR)			
2.	(a)	Discuss about List Data type and Tuple Data Type in Python with example.	7M	CO1	L4
	(b)	What is Python? Show indexing and slicing with different data type structures?	7M	CO1	L1
		UNIT – II			
3.	(a)	Write a python Program to read a number and display corresponding day using if_elif_else?	7M	CO2	L1
	(b)	Write a program to generate Fibonacci series using Python.	7M	CO2	L1
		(OR)			
4.	(a)	Explain various Jump Control Statements in Python with Examples	7M	CO2	L2
	(b)	Write a program to create a list with computer languages and display the same by using while loop.	7M	CO2	L1
		UNIT – III			
5.	(a)	Explain about different types of arguments in Python.	7M	CO3	L2
	(b)	Write a suitable python program to demonstrate passing arguments to function.	7M	CO3	L1
		(OR)			
6.	(a)	Can a function return multiple values? If yes, Explain with a suitable Python program.	7M	CO3	L2
	(b)	What is recursion? Write a python program to find GCD of a given numbers using recursion.	7M	CO3	L1
		UNIT – IV			
7.	(a)	How to create nested lists? Demonstrate how to create and print a 3-dimensional matrix with lists.	7M	CO4	L1
	(b)	What is List Comprehension? With an example program demonstrate List Comprehension.	7M	CO4	L1
		(OR)			
8.	(a)	Discuss about list pop( ), insert( ) and remove( ) methods with examples.	7M	CO4	L4
	(b)	Explain the following file built-in functions and method with clear syntax, description and illustration: a) open( ) b) file( ) c) seek( ) d) tell( )	7M	CO4	L2
		UNIT-V			
9.	(a)	What are different types of inheritance supported by Python? Explain.	7M	CO5	L1
	(b)	Explain how to implement constructor and destructor in python with example.	7M	CO5	L2
		(OR)			
10.	(a)	What is an abstract class? Implement abstract class with a suitable python program.	7M	CO5	L1
	(b)	Explain various types of variables and methods in OOP Python.	7M	CO5	L2

Q.P. Code: 18OE2603

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Professional Communication (OE - II)

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

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

			Marks	CO	BL
		UNIT - I			
1.		Explain the importance of technical communication in communal world and the types of communication.	14M	CO1	L2
		(OR)			
2.	(a)	Find synonyms of the following words (i) Elementary (ii) Mandatory (iii) Wreck (iv) Hazardous (v) Industrious (vi) Dictionary (vii) Plight	7M	CO1	L5
	(b)	Change the voice to the following sentences (i) Who wrote the Geetanjali. (ii) She requested him to give her some money. (iii) They will have planted saplings in the fields next week. (iv) During the 13th century the Kakatiyas built the Warangal fort. (v) The government is building the house for the poor. (vi) They have promoted the IIFA in this program. (vii) Man ki baath was being spoken by the PM in Man ki baath Program.	7M	CO1	L6
		UNIT – II			
3.		Explain about Reading Skills and types.	14M	CO2	L2
		(OR)			
4.		Define what are SQ3R and PQRST methods.	14M	CO2	L1
		UNIT – III			
5.		Explain how technical knowledge supports a student at the time of public presentation.	14M	CO3	L2
		(OR)			
6.		Describe what is GD and its stages.	14M	CO3	L4
		UNIT – IV			
7.		Discuss the importance of effective listening and how to develop. Define with personal experience.	14M	CO4	L4
		(OR)			
8.		Define what is listening and types of listening Skills.	14M	CO4	L1
		UNIT-V			
9.		Write a report on the present education system regarding public opinion.	14M	CO5	L1
		(OR)			
10.		Find the errors in the given bellow sentences and rewrite. (i) My cousin brother and Sunil have been lives since 2014. (ii) The tourist requested the clerk to give the information's. (iii) Anyone of these two girls can be appointed. (iv) Myself will come to your house. (v) The platinum are a very expensive metal. (vi) Michel ask me what I is doing. (vii) Although Angelina was lazy but she managed to pass. (viii) I met famous Indian Two writers yesterday. (ix) I am not speaking to anybody in this class (x) Neither of these pens are mine (xi) The police has been informed about the theft. (xii) Ram is intelligenter than Shyam. (xiii) These all books are interesting. (xiv) Rithu is wearing a pink, pretty sari.	14M	CO5	L5

Q.P. Code: 18OE2608 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Corrosion & Control (OE - II)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Discuss any seven factors that influence corrosion.	7M	CO1	L2
	(b)	Write the mechanism involved in dry corrosion	7M	CO1	L1
		(OR)			
2.	(a)	Define corrosion and explain the galvanic corrosion	7M	CO1	L2
	(b)	Distinguish wet and dry corrosion	7M	CO1	L4
		UNIT – II			
3.	(a)	Explain the chemistry involved in concentration cell corrosion.	7M	CO2	L2
	(b)	Discuss the Galvanic corrosion	7M	CO2	L2
		(OR)			
4.	(a)	Illustrate the controlling ways of following corrosions i) pitting ii) galvanic iii) uniform	9M	CO2	L2
	(b)	Differentiate galvanic corrosion and pitting corrosion	5M	CO2	L4
		UNIT – III			
5.	(a)	Describe the corrosion of a metal in an aqueous solution	7M	CO3	L2
	(b)	Outline the microbial-induced corrosion	7M	CO3	L2
		(OR)			
6.	(a)	Illustrate the acidic and alkaline corrosion	7M	CO3	L2
	(b)	Summarize your understanding of corrosion in water	7M	CO3	L2
		UNIT – IV			
7.	(a)	Highlight the difference between Sacrificial Anode and Impressed Current protection methods	7M	CO4	L4
	(b)	Define electroless plating and Illustrate electroless plating.	7M	CO4	L2
		(OR)			
8.	(a)	Distinguish between electroplating and electroless plating	7M	CO4	L4
	(b)	Mention different methods used for the prevention of corrosion of metal and discuss any one method.	7M	CO4	L2
		UNIT-V			
9.	(a)	Outline Gibb's free energy	7M	CO5	L2
	(b)	Discuss the standard expressions for corrosion rate	7M	CO5	L2
		(OR)			
10.	(a)	Summarize your knowledge of the EMF series and list their applications	7M	CO5	L2
	(b)	How does cell potential relate to corrosion? Explain	7M	CO5	L2

Q.P. Code: 18OE2610

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Digital & Social Media Management (OE - II)

Time: 3 Hours | Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	List and explain the environmental factors influencing digital marketing?	7M	CO1	L1
	(b)	Explain the merits and demerits of digital marketing?	7M	CO1	L2
		(OR)			
2.	(a)	Determine how Digital Marketing is useful in various organizations?	7M	CO1	L3
	(b)	Explain about 3i principles in digital marketing?	7M	CO1	L2
		UNIT – II			
3.	(a)	Differentiate between online marketing and traditional marketing?	7M	CO2	L4
	(b)	Discuss about digital marketing strategies?	7M	CO2	L6
		(OR)			
4.	(a)	Explain about e-mail marketing?	7M	CO2	L2
	(b)	Explain how to make Online Advertising more effective?	7M	CO2	L2
		UNIT – III			
5.	(a)	Describe the various social media channels?	7M	CO3	L2
	(b)	Discuss about cybercrime and security issues in Social media marketing?	7M	CO3	L6
		(OR)			
6.	(a)	What do you mean by Social media mining?	7M	CO3	L2
	(b)	Discuss about social media strategies in detail?	7M	CO3	L6
		UNIT – IV			
7.	(a)	Discuss about technological changes in marketing?	7M	CO4	L6
	(b)	What are the steps that marketer needs to take in order to execute a mobile marketing strategy?	7M	CO4	L2
		(OR)			
8.	(a)	Discuss about the process of mobile marketing?	7M	CO4	L6
	(b)	Elaborate on Mobile Commerce?	7M	CO4	L6
		UNIT-V			
9.	(a)	Explain about the importance of data and Analytics of digital marketing?	7M	CO5	L2
	(b)	Explain about content marketing?	7M	CO5	L2
		(OR)			
10.	(a)	"ROI Measurement is an Act on Insights to Reassess, Revise and Rework". Comment?	7M	CO5	L4
	(b)	Elaborate on Social media analytics?	7M	CO5	L6

Q.P. Code: 18OE105

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Water Supply Engineering (OE - III)

Time: 3 Hours | Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Explain the need for protected water supply system	7M	CO1	L2
	(b)	What is per capita consumption? Explain the factors governing demand of water	7M	CO1	L1
		(OR)			
2.	(a)	Explain the fluctuation in water demand	6M	CO1	L2
	(b)	Estimate the population of a city for the year 2031, based on past census records using Geometric and Incremental increase method	8M	CO1	L5

Census Year	1961	1971	1981	1991	2001	2011
Population(in lakhs)	1.65	2.20	2.80	3.60	4.20	5.50

		UNIT – II			
3.	(a)	Explain the various sources water and their quantity and quality	7M	CO2	L2
	(b)	Explain the various water borne diseases	7M	CO2	L2
		(OR)			
4.	(a)	Explain the following characteristics of water: (i) Turbidity (ii) Hardness (iii) Chloride and (iv) E-coli	8M	CO2	L2
	(b)	Describe the drinking water quality standards.	6M	CO2	L4
		UNIT – III			
5.	(a)	Explain flow chart of water treatment plant	7M	CO3	L2
	(b)	Design a sedimentation tank to treat 5 MLD of water. Make suitable assumption where necessary.	7M	CO3	L6
		(OR)			
6.	(a)	With neat sketch, explain the working principle of rapid sand filter	7M	CO3	L2
	(b)	Explain the various disinfection methods	7M	CO3	L2
		UNIT – IV			
7.	(a)	Explain the principles and functions of aeration	7M	CO4	L2
	(b)	Explain the removal Iron and Manganese from water	7M	CO4	L2
		(OR)			
8.	(a)	What is meant by water softening? Explain any one method of water softening in detail.	7M	CO4	L1
	(b)	Explain the various causes and effects of water pollution	7M	CO4	L2
		UNIT-V			
9.	(a)	Explain the various systems of water distribution with merits and demerits	7M	CO5	L2
	(b)	With neat sketch, explain the various layouts of water distribution	7M	CO5	L2
		(OR)			
10.	(a)	Explain the various types of valves and their importance in water supply system	7M	CO5	L2
	(b)	Explain the systems of house drainage with neat sketch	7M	CO5	L2

Q.P. Code: 18OE106

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Construction Practice and Management (OE - III)

Time: 3 Hours Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	State and explain main objectives of construction management	7M	CO1	L2
	(b)	Discuss different types of constructions.	7M	CO1	L2
		(OR)			
2.		Explain different stages in construction	14M	CO1	L2
		UNIT – II			
3.	(a)	List out and discuss about the rules to be followed for developing networks.	7M	CO2	L2
	(b)	Differentiate between critical and non-critical activities. What is meant by critical path?	7M	CO2	L3
		(OR)			
4.		Describe the importance of construction planning. Elucidate with an example, the concept of work breakdown structure in construction planning.	14M	CO2	L2
		UNIT – III			
5.	(a)	Describe the classification of construction equipment.	7M	CO3	L1
	(b)	Explain about different types of compaction equipment.	7M	CO3	L1
		(OR)			
6.	(a)	Discuss about the effects of blasting on environment.	7M	CO3	L2
	(b)	What is meant by smooth blasting? List out the circumstances where it is required.	7M	CO3	L1
		UNIT – IV			
7.		State the need for inspection and quality control in construction works	14M	CO4	L2
		(OR)			
8.		Write a short note on ethical audit procedures and audit statement	14M	CO4	L2
		UNIT-V			
9.		Explain different types of safety measures in construction work and also discuss the role of safety engineer in construction.	14M	CO5	L3
		(OR)			
10.		Compare the merits and demerits of different types of organizations	14M	CO5	L2

Q.P. Code: 18OE205 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Intelligent Control Techniques (OE - III)

Time: 3 Hours | Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	What is "Artificial Intelligence and Artificial Intelligence Technique"? Briefly explain how AI Technique can be represented.	7M	CO1	L1
	(b)	What is Knowledge Representation	7M	CO1	L1
		(OR)			
2.	(a)	Differentiate between Natural (Human) Intelligence & Artificial Intelligence	7M	CO1	L4
	(b)	What are the different types of Artificial Intelligence Approaches	7M	CO1	L1
		UNIT – II			
3.		Explain any Three types of Activation functions in ANN with their mathematical properties involving Sigmoid functions	14M	CO2	L2
		(OR)			
4.		What is Artificial Neural networks? Explain the structure of biological neuron in detail.	14M	CO2	L1
		UNIT – III			
5.		Draw the architecture of a single layer perceptron (SLP) and explain its operation. Mention its advantages and disadvantages.	14M	CO3	L2
		(OR)			
6.	(a)	Explain ADALINE and MADALINE and its architecture. List some of its applications.	7M	CO3	L2
	(b)	List and explain the limitations and advantages of back propagation algorithm	7M	CO3	L2
		UNIT – IV			
7.	(a)	Define fuzzy set theory. How fuzzy set are different from Crisp set?	7M	CO4	L1
	(b)	Explain in detail various components of "Fuzzy Logic System	7M	CO4	L2
		(OR)			
8.	(a)	If $\tilde{A} = \{(x\,1, 0.2), (x\,2, 0.7), (x\,3, 0.4)\}$ and $\tilde{B} = \{(y\,1, 0.5), (y\,2, 0.6)\}$ be two fuzzy sets defined on the universes of discourse $X = \{x\,1, x\,2, x\,3\}$ and $Y = \{Y1, Y2\}$. Evaluate the fuzzy relation $\tilde{R}$.	4M	CO4	L6
	(b)	Explain about the development of rule base and decision making system.	10M	CO4	L2
		UNIT-V			
9.		What is bio-inspired optimization algorithms. How it will be useful in in optimization the problems	14M	CO5	L1
		(OR)			
10.		What is the need of Computational intelligence in solving the problems? Briefly explain with the help of an example.	14M	CO5	L1

Q.P. Code: 18OE305

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Quantitative Analysis for Business Decisions (OE – III)

Time: 3 Hours Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Comment the following statements. (i) Operations Research is the art of wining war without actually fighting it. (ii) Operations Research is the art of finding bad answer where worse exists.	7M	CO1	L2
	(b)	What is an Operations Research Model? What are the its characteristics and limitations?	7M	CO1	L1
		(OR)			
2.		Solve the following LP problem using the simplex method. Maximize $Z = 3X_1 + 2X_2$ Subjectto $2X_1 + X_2 \leq 2$ $3X_1 + 4X_2 \geq 12$ $X_1, X_2 \geq 0$	14M	CO1	L3
		UNIT – II			
3.		A salesman has to visit five cities A, B, C, D and E. The distances (in hundred km) between the five cities are as follows:	14M	CO2	L3

	To City					
		A	B	C	D	E
From city	A	-	17	16	18	14
	B	17	-	18	15	16
	C	16	18	-	19	17
	D	18	15	19	-	18
	E	14	16	17	18	-

If the salesman starts from city A and has to come back to city A, which route should he select so that total distance travelled by him is minimized?

(OR)

4.	A manufacturer has distribution centres at Agra, Allahabad and Kolkata. These centres have availability of 40, 20 and 40 units of his product, respectively. His retail outlets at A, B, C, D and E require 25, 10, 20, 30 and 15 respectively. The transportation cost (in rupees) per unit between each centre outlet is given below:	14M	CO2	L3

Distribution Centres	Retail Outlets				
	A	B	C	D	E
Agra	55	30	40	50	40
Allahabad	35	30	100	45	60
Kolkata	40	60	95	35	30

Determine the optimal distribution to minimize the cost of transportation.

UNIT – III

5.	Find the cost period of individual replacement of an installation of 300 lighting bulbs, given the following: i) Cost of replacing individual bulb is Rs.3 ii) Conditional probability of failure is given below:	14M	CO3	L3

(OR)

Q.P. Code: 18OE306

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Entrepreneurship (OE - III)

Time: 3 Hours Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.		Discuss the competence, opportunities and challenges for the growth of Indian industry	14M	CO1	L1
		(OR)			
2.	(a)	Explain the role of entrepreneurship in economic development of a nation	7M	CO1	L2
	(b)	Society supports Corporate and so should be Corporate. Justify	7M	CO1	L3
		UNIT – II			
3.		Environment has a great influence on women entrepreneurship. Elaborate	14M	CO2	L2
		(OR)			
4.		Discuss the characteristics and selection of first generation entrepreneurs	14M	CO2	L2
		UNIT – III			
5.		Market feasibility is vital for the success of any enterprise. Explain the reasons as well as Market feasibility	14M	CO3	L2
		(OR)			
6.		Detail the executive summary of a business plan.	14M	CO3	L2
		UNIT – IV			
7.		What is project organization? Explain how the tax burden is calculated	14M	CO4	L2
		(OR)			
8.		Given the following information, answer the subsequent questions:	14M	CO4	L3

Task	A	B	C	D	E	F	G	H	I	J
Time	2	8	10	6	3	3	7	5	2	8

(i) Draw the arrow diagram
(ii) Identify critical path and find the total duration of the project

		UNIT-V			
9.		Write a short note on (i) Leadership concepts (ii) Leadership models	14M	CO5	L1
		(OR)			
10.		Explain time management matrix with the help of a neat schematic	14M	CO5	L2

Q.P. Code: 18OE406

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Introduction to IOT (OE - III)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	What are the characteristics of IoT?	7M	CO1	L1
	(b)	Explain the architecture of IoT with a neat sketch.	7M	CO1	L2
		(OR)			
2.	(a)	Explain in detail about the technologies for IoT.	7M	CO1	L2
	(b)	How security can be provided in IoT?	7M	CO1	L1
		UNIT – II			
3.	(a)	Explain the following basic electronics for IoT. (i) Voltage (ii) Current	7M	CO2	L2
	(b)	Describe the pulse width modulation in IoT.	7M	CO2	L2
		(OR)			
4.	(a)	Discuss binary calculations in detail with examples.	7M	CO2	L2
	(b)	Write about multipurpose computers for IoT.	7M	CO2	L1
		UNIT – III			
5.	(a)	Describe the need of Arduino IDE in programming.	7M	CO3	L2
	(b)	Explain the step by step installation of Arduino IDE.	7M	CO3	L2
		(OR)			
6.	(a)	Illustrate the Arduino C library functions for serial functions.	7M	CO3	L2
	(b)	Write about mathematics library functions.	7M	CO3	L1
		UNIT – IV			
7.		Explain the interfacing of temperature sensor with Arduino.	14M	CO4	L2
		(OR)			
8.		Explain the interfacing of LED with Arduino.	14M	CO4	L2
		UNIT-V			
9.		Write about programming NODEMCU using Arduino IDE.	14M	CO5	L1
		(OR)			
10.		How data can be transmitted from temperature sensor to Open source IoT cloud platform using NODEMCU?	14M	CO5	L1

Q.P. Code: 18OE405

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Electronic Instrumentation & Measurements (OE - III)

Time: 3 Hours Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Difference between static and dynamic characteristics of measuring instruments?	7M	CO1	L2
	(b)	Explain the working of the AF wave Analyzer with relevant circuit diagram?	7M	CO1	L1,L3
		(OR)			
2.	(a)	Explain the operation of Harmonic Distortion Analyzer with relevant diagrams?	7M	CO1	L1,L3
	(b)	Draw and explain the basic wave Analyzers?	7M	CO1	L1,L3
		UNIT – II			
3.	(a)	Explain the working of Successive –approximation type Digital voltmeter with a neat block diagram	7M	CO2	L1,L3
	(b)	List the Advantages of Digital voltmeter	7M	CO2	L2
		(OR)			
4.	(a)	Explain the working of Ramp type Digital voltmeter with a neat block diagram	7M	CO2	L1,L3
	(b)	Write a short notes on i)digital tachometer ii)digital phasemeter	7M	CO2	L1
		UNIT – III			
5.	(a)	Explain the working of dual beam CRO with relevant diagram?	7M	CO3	L1,L3
	(b)	Compare dual trace and dual beam Oscilloscope?	7M	CO3	L2
		(OR)			
6.	(a)	With neat diagram, enumerate the main components of CRT?	7M	CO3	L1,L3
	(b)	Explain the working of vertical amplifier with relevant diagram?	7M	CO3	L1,L3
		UNIT – IV			
7.	(a)	Draw the Maxwell's bridge circuit and derives the Expression for the unknown Inductance?	7M	CO4	L1, L3
	(b)	Explain the "parallel-connection" method of using Q-meter and Obtain the expressions for resistance, reactance and Q factor.	7M	CO4	L1, L3
		(OR)			
8.	(a)	A Wein bridge circuit consists of the following: R1= 4.7 KΩ, C1= 5 nf, R2= 20 kΩ, C3 = 10 nf, R3= 10 kΩ, R4= 100kΩ Determine the frequency of the circuit.	7M	CO4	L-3
	(b)	Draw the Schering bridge and derive the relation for the unknown capacitance?	7M	CO4	L1, L3
		UNIT-V			
9.	(a)	Illustrate and Explain Data Acquisition system (DAS)?	7M	CO5	L4
	(b)	Describe the suitable diagrams the working principle of strain gauges?	7M	CO5	L1
		(OR)			
10.	(a)	Draw and Explain the function of Thermocouples?	7M	CO5	L1,L3
	(b)	Explain the capacitance transducers with relevant diagrams?	7M	CO5	L1,L3

Q.P. Code: 18OE505

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Web Technologies (OE - III)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Create a form in HTML using Text area, Check Box and colors	7M	CO1	L6
	(b)	Write a HTML program to describe the font effects like font style, color, heading style?	7M	CO1	L4
		(OR)			
2.	(a)	What are the different types of Lists in HTML and discuss with suitable example?	7M	CO1	L2
	(b)	Write about table tags and write a program to create a class time table?	7M	CO1	L4
		UNIT – II			
3.		Discuss in Detail about types of operators available in Java Script	14M	CO2	L6
		(OR)			
4.		Discuss in details about Cascading Style Sheets (CSS) in Dynamic HTML	14M	CO2	L6
		UNIT – III			
5.	(a)	What are applets in the Java Script?	7M	CO3	L2
	(b)	Explain about event handling in the applets?	7M	CO3	L5
		(OR)			
6.		Write and Explain java swing program to implement Labels and Buttons	14M	CO3	L5
		UNIT – IV			
7.	(a)	What is web server? Write notes on Tomcat server	7M	CO4	L3
	(b)	Explain in detail about format of an HTTP-GET and POST requests	7M	CO4	L5
		(OR)			
8.		Discuss in detail about Servlets with suitable example	14M	CO4	L6
		UNIT-V			
9.	(a)	Explain the architecture of JDBC?	7M	CO5	L5
	(b)	What are the problems in running the Servlet?	7M	CO5	L4
		(OR)			
10.	(a)	Discuss in detail about JSP Processing	7M	CO5	L6
	(b)	What are the advantages of JSP and how the problem with servlet give one example	7M	CO5	L2

Q.P. Code: 18OE506

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Operating Systems (OE - III)

Time: 3 Hours Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Define Operating System? Explain the basic services provided by the operating system.	7M	CO1	L1,L2
	(b)	Explain the structure of Operating System in detail.	7M	CO1	L2
		(OR)			
2.	(a)	Briefly explain the different types of System Calls.	7M	CO1	L2
	(b)	Define Distributed System. Explain the functions of an Operating System.	7M	CO1	L1,L2
		UNIT – II			
3.	(a)	Define process. Explain the process concepts in detail.	7M	CO2	L1,2
	(b)	What is critical section. Explain the Peterson's solution to solve the critical section problem.	7M	CO2	L1,L2
		(OR)			
4.	(a)	Illustrate about process scheduling.	7M	CO2	L2
	(b)	Discuss the importance of Monitors for the process synchronization in detail.	7M	CO2	L6
		UNIT – III			
5.	(a)	What is Memory allocation. Explain contiguous memory allocation in detail.	7M	CO3	L1,L2
	(b)	Explain about segmentation.	7M	CO3	L5
		(OR)			
6.	(a)	What is swapping? Explain about Virtual memory	7M	CO3	L1,L2
	(b)	Explain the structure of the page table.	7M	CO3	L2
		UNIT – IV			
7.	(a)	What is Deadlock? Explain the different methods for Deadlock Prevention.	7M	CO4	L1,L2
	(b)	Explain the different file access methods and file operations in detail.	7M	CO4	L2
		(OR)			
8.	(a)	Explain the Banker's Algorithm for deadlock avoidance.	7M	CO4	L2
	(b)	Compare the different file access methods.	7M	CO4	L4
		UNIT-V			
9.	(a)	What is Protection? Explain domain protection with an example.	7M	CO5	L1,L2
	(b)	Explain the Principles of Protection in detail.	7M	CO5	L5
		(OR)			
10.	(a)	Discuss about Access Matrix with neat sketch.	7M	CO5	L6
	(b)	Explain the implementation of Access Matrix in detail.	7M	CO5	L2

Q.P. Code: 18OE2613

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Fuel Technology (OE – III)

Time: 3 Hours Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	Define fuel and classify fuels	7M	CO1	L1
	(b)	Outline the characteristics of an ideal fuel	7M	CO1	L2
		(OR)			
2.	(a)	What is meant by calorific value of a fuel? Discuss various types of calorific value and give their relation.	7M	CO1	L1
	(b)	Mention the criteria for selecting good fuel.	7M	CO1	L3
		UNIT – II			
3.	(a)	Explain the manufacture of metallurgical Coke by Otto Hoffmann Byproduct method	7M	CO2	L2
	(b)	Write notes on classification of Coal by rank.	7M	CO2	L3
		(OR)			
4.	(a)	How is metallurgical coke prepared?	7M	CO2	L2
	(b)	List the properties, advantages and disadvantages of solid fuels	7M	CO2	L4
		UNIT – III			
5.	(a)	Illustrate Refining of petroleum with a neat diagram	7M	CO3	L2
	(b)	Write notes on advantages and disadvantages of liquid fuels	7M	CO3	L1
		(OR)			
6.	(a)	Discuss the preparation of water gas with a rough diagram and write the chemical reactions takes place in this process.	7M	CO3	L6
	(b)	List the important properties of gaseous fuels.	7M	CO3	L1
		UNIT – IV			
7.	(a)	Outline the preparation, properties & uses of Producer gas.	7M	CO4	L2
	(b)	Write short notes on characteristics of gaseous fuels	7M	CO4	L
		(OR)			
8.		How the Junker's Gas Calorimeter is useful for the determination of calorific value of gaseous fuels.	14M	CO4	L1
		UNIT-V			
9.	(a)	Outline the uses of CNG and LPG fuels	7M	CO5	L2
	(b)	Explain the types and applications of biofuels	7M	CO5	L2
		(OR)			
10.	(a)	Explain the types and applications of biofuels	7M	CO5	L5
	(b)	Explain the significance of alternate fuels with examples	7M	CO5	L5

Q.P. Code: 18OE2611

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Number Theory & Its Applications (OE - III)

Time: 3 Hours Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

			Marks	CO	BL
		UNIT - I			
1.	(a)	State and prove well ordering property	7M	CO1	L5
	(b)	Store – 258 in a 16- memory location using 1's complement in computer and also find store 124 in 16-bit memory location using 2's complement.	7M	CO1	L4
		(OR)			
2.	(a)	To find the base 2 expansion of 1864 by division algorithm	7M	CO1	L3
	(b)	Find the GCD(252,198)	7M	CO1	L3
		UNIT – II			
3.	(a)	Factor the number 200819 using Fermat factorization method.	7M	CO2	L2
	(b)	State and prove Euclidean algorithm.	7M	CO2	L4
		(OR)			
4.		State and Prove Fundamental theorem of Arithmetic.	14M	CO2	L5
		UNIT – III			
5.	(a)	Prove that If a≡ b (mod n) and c ≡d (mod n) then prove that a+c≡ b+ d (mod n) and ac≡ bd (mod n).	7M	CO3	L5
	(b)	Solve 9x ≡12 (mod 15), find x.	7M	CO3	L4
		(OR)			
6.	(a)	Solve the system of equations $x \equiv 1(mod5)$, $x \equiv 2\ (mod6)$ $and\ x \equiv 3(mod7)$ by using Chinese remainder theorem	7M	CO3	L4
	(b)	Find the solutions of the following system of linear congruence: $4x + y \equiv 2(mod5)$ $and\ 2x + 3y \equiv 1(mod5)$	7M	CO3	L4
		UNIT – IV			
7.	(a)	Find the Remainder when 2^{402} is divided by 41.	7M	CO4	L3
	(b)	State and Prove Fermat's Little theorem.	7M	CO4	L5
		(OR)			
8.		State and prove Ferrmat's little theorem	14M	CO4	L5
		UNIT-V			
9.		If "n" is an odd Pseudo prime then prove that $M_n = 2^n - 1$ is a large one.	14M	CO5	L4
		(OR)			
10.	(a)	Solve the linear congruence 4x≡ $7(mod15)$ using Euler's theorem.	7M	CO5	L3
	(b)	Find φ (n) for the integer n with 13≤ n≤20.	7M	CO5	L4

Q.P. Code: 18OE2612

SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Physics of Renewable Energy (OE - III)

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

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	What is meant by renewable energy sources? Explain the advantages and disadvantages of renewable source	8M	CO1	L1
	(b)	Explain about the biogas cogeneration.	6M	CO1	L2
		(OR)			
2.	(a)	Explain the biodiesel and fuel from plantation.	7M	CO1	L2
	(b)	What is Ethanol? Discuss how synthesis of fuels.	7M	CO1	L1
		UNIT – II			
3.	(a)	Explain the principle and conversion of solar energy into heat.	6M	CO2	L2
	(b)	How solar air collectors are classified ? What are the main applications of dier.	8M	CO2	L1
		(OR)			
4.	(a)	Define photovoltaic cell ? What are the advantages and disadvantages of photovoltaic solar energy conversion.	8M	CO2	L1
	(b)	Describe the solar energy as a part of sustainable development.	6M	CO2	L6
		UNIT – III			
5.	(a)	List and explain the different types of turbines consider in wind energy system.	8M	CO3	L4
	(b)	Write about Rotor efficiency?	6M	CO3	L2
		(OR)			
6.	(a)	What is wind energy ? How does it originate and on what factors does the earth wind depends.	8M	CO3	L1
	(b)	List the applications of wind energy.	6M	CO3	L4
		UNIT – IV			
7.	(a)	What are micro hydropower plants and how do you classify them .	8M	CO4	L1
	(b)	Explain the hydro energy.	6M	CO4	L2
		(OR)			
8.	(a)	State the basic principles of tidal energy production and write major components of tidal power plant.	8M	CO4	L2
	(b)	Explain the various advantages and disadvantages of tidal energy generation system.	6M	CO4	L2
		UNIT-V			
9.	(a)	Describe principle of geo thermal energy? What are the limitations of harnessing geo thermal energy.	8M	CO5	L6
	(b)	Discuss about various applications of geo thermal energy systems and its usage	6M	CO5	L5
		(OR)			
10.	(a)	Explain the process of power generation form a geo thermal power plant .	7M	CO5	L2
	(b)	Explain Mining thermal energy from Hot dry Rock resources.	7M	CO5	L2

Q.P. Code: 18OE2615 | SET - 1

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

B. Tech. VII Semester (R18UG) Regular & Supple. Examinations of January – 2023

SUB: Basic Financial Management for Engineers (OE - III)

Time: 3 Hours | Max. Marks: 70

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

			Marks	CO	BL
		UNIT - I			
1.	(a)	Define Financial Management? Explain its objectives.	7M	CO1	L2
	(b)	What are the functions of financial manager? Explain.	7M	CO1	L1
		(OR)			
2.	(a)	Discuss the nature and scope of financial management in detail.	7M	CO1	L1
	(b)	Enumerate the functional areas under Finance Department and discuss their functions.	7M	CO1	L2
		UNIT – II			
3.	(a)	What are the various Long -Term sources of finance? Explain in detail.	7M	CO2	L1
	(b)	Define Opportunity Cost? Discuss various cost of finance.	7M	CO2	L1
		(OR)			
4.	(a)	Discuss various components of cost of capital.	7M	CO2	L2
	(b)	Define Weighted Average Cost of Capital? Explain the factors influencing cost of capital.	7M	CO2	L2
		UNIT – III			
5.	(a)	Define Capital Structure? Explain the concept of optimum capital structure.	7M	CO3	L2
	(b)	Discuss briefly EBIT-EPS Analysis.	7M	CO3	L2
		(OR)			
6.	(a)	What is Capital Leverage? Explain various leverage ratios.	7M	CO3	L1
	(b)	Explain the importance of capital structure.	7M	CO3	L2
		UNIT – IV			
7.	(a)	Define Working Capital? Explain the significance of Working Capital in organizational perspective.	7M	CO4	L1
	(b)	Discuss the types of working capital.	7M	CO4	L2
		(OR)			
8.		What is Working Capital? Explain the factors influencing the needs of Working Capital of a organization.	14M	CO4	L2
		UNIT-V			
9.	(a)	What is Time Value of Money? Explain its importance.	7M	CO5	L1
	(b)	Discuss the importance of Capital Budgeting.	7M	CO5	L2
		(OR)			
10.	(a)	What is Capital Budgeting? List different types of Capital Budgeting.	7M	CO5	L2
	(b)	Davis Industries must choose between a gas-powered and an electric-powered fork lift truck for moving materials in its factory. Since both forklifts perform the same function, the firm will choose only one. (They are mutually exclusive investments.) The electric- powered truck will cost more, but it will be less expensive to operate; it will cost $22,000, whereas the gas-powered truck will cost $17,500. The cost of capital that applies to both investments is 12 percent. The life for each type of truck is estimated to be 6 years, during which time the net cash flows for the electric-powered truck will be $6,290 per year and those for the gas- powered truck will be $5,000 per year. Annual net cash flows include depreciation expenses. Calculate the NPV and IRR for each type of truck, and decide which to recommend.	7M	CO5	L4