

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Operations Research (CE)

Time: 3 Hours

Max. Marks: 70

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

UNIT – I

1. Solve the following linear programming problem using graphical method 14M
 max imize $z = 5x_1 + 7x_2$
 subject to $x_1 + x_2 \leq 4, 3x_1 + 8x_2 \leq 24, 10x_1 + 7x_2 \leq 35$ and $x_1, x_2 > 0$

(OR)

2. Solve the following linear programming problem using simplex method 14M
 max imize $z = x_1 - 3x_2 + 3x_3$
 subject to $3x_1 - 5x_2 + 2x_3 \leq 7, 2x_1 + 4x_2 \geq -12,$
 $-4x_1 + 3x_2 + 8x_3 \leq 10$ and $x_1, x_2, x_3 \geq 0$

UNIT – II

3. Solve the following linear programming problem using dual simplex method 14M
 max imize $z = 2x_1 + 4x_2$
 subject to $2x_1 + x_2 \geq 4, x_1 + 2x_2 \geq 3,$
 $2x_1 + 2x_2 \leq 12,$ and $x_1, x_2 \geq 0$

(OR)

4. Consider the following linear programming problem and solve 14M
 max imize $z = 10x_1 + 15x_2 + 20x_3$
 subject to $2x_1 + 4x_2 + 6x_3 \leq 24, 3x_1 + 9x_2 + 6x_3 \leq 30,$
 and $x_1, x_2, x_3 \geq 0$

UNIT – III

5. Determine the initial basic feasible solution for the following transportation problem. 14M

		Destination				Supply
		1	2	3	4	
Source	1	6	4	1	5	14
	2	8	9	2	7	16
	3	4	3	6	2	5
Demand		6	10	15	4	35

Using I) North-West Corner cell method II) Least Cost cell method and III) VAM

(OR)

6. Find the initial basic feasible solution for the following transportation problem by VAM. 14M

		Destination				Supply
		1	2	3	4	
Source	1	11	13	17	14	250
	2	16	18	14	10	300
	3	21	24	16	10	400
Demand		200	225	275	250	950

UNIT – IV

7. Find the sequence that minimizes the total time required to perform the following jobs on three machines in the order ABC. The processing time (hours) are given as follows. 14M

Job	1	2	3	4	5	6
Machine – A	4	13	6	3	10	12
Machine – B	9	7	5	7	4	2
Machine –C	14	15	10	13	9	14

(OR)

8. A travelling sales man has to visit 5 cities. He wishes to start from a particular city, visit each city once and then return to his starting point cost of going from one city to another city is shown below. 14M

		To city				
		A	B	C	D	E
A	From city	∞	4	10	14	2
B		12	∞	6	10	4
C		16	14	∞	8	14
D		24	8	12	∞	10
E		2	6	4	16	∞

UNIT-V

9. Explain about Dynamic Programming and Capital Budget Problem 14M

(OR)

10. An organization is planning to diversify its business with a maximum outlay of Rs. 5 crores. It has identified three different locations to install plants. The organization can invest in one or more of these plants subjects to the availability of the found. The different possible alternatives and their investment (in crores of rupees) and present worth of returns during the useful life (in crores of rupees) of each of these plants are summarized in table below. The first row of table has zero cost and zero return for all the plants. Hence, it is known as do-nothing alternative. Find the optimal allocation of the capital to different plants which will maximize the corresponding sum of the present worth of returns. 14M

Alternative	Plant 1		Plant 2		Plant 3	
	Cost	Return	Cost	Return	Cost	Return
1	0	0	0	0	0	0
2	1	15	2	14	1	3
3	2	18	3	18	2	7
4	4	28	4	21	--	--

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Water Supply Engineering (CE)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. (a) What is the importance of public supply scheme in the present-day civil life? What are the objectives of the water supply system? 7M
 (b) Determine the future population of a satellite town by geometric increase method for the year 2021 with the following data 7M

Year	1951	1961	1971	1981	2011	2021
Population in 1000's	95	115	135	167	197	?

(OR)

2. (a) State all the population forecasting methods and explain. 6M
 (b) The population of a locality is given below 8M

Year	1900	1920	1940	1960	1980	2000	2020
Population	36800	47700	58600	64000	79000	89000	135000

Estimate the population of the locality in 2040 by incremental method?

UNIT - II

3. (a) Enumerate and discuss in brief the various physical and chemical characteristics of testing of water supplies. What steps would you take in order to make them fit for drinking. 7M
 (b) Describe briefly about types of Intake towers? 7M

(OR)

4. (a) Describe briefly about water quality standards and impurities in water? 7M
 (b) Enumerate the important water-borne diseases in India and describe how, with your knowledge of various branches of science applicable to sanitary engineering, you would set about to prevent the incidence of these diseases. 7M

UNIT - III

5. (a) Explain briefly about the sedimentation tanks and design the continuous flow sedimentation tank? 6M
 (b) Explain briefly the following process 8M
 i) Break point chlorination ii) Super chlorination

(OR)

6. (a) The maximum daily demand at a water purification plant has been estimated as 12 million liters per day. Design the dimensions of a suitable sedimentation tank (fitted with mechanical sludge removal arrangements) for the raw supplies assuming a detention period of 8 hours and the velocity of flow as 25cm/min 8M
 (b) Explain briefly about Defloridation and Removal of Odours? 6M

UNIT - IV

7. (a) Design a zeolite softener for an industrial establishment working for 2 shifts of 8 hours each for the following data and draw a neat sketch of the unit. 8M
 i. Soft water requirement = 2.5 ML/d in 16 hours ii. Raw water hardness = 800 mg/L as CaCO₃
 iii. Product water hardness = 50 mg/L as CaCO₃ iv. Exchange capacity of the resin = 35 kg(CaCO₃)/m³
 v. Salt required for regeneration = 50 kg (NaCl)/m³ of resin.
 (b) Describe in detail about the principle and mechanism of desalination process. 6M

(OR)

8. (a) Discuss about the Ion exchange method of water softening with a sketch 8M
 (b) Describe the types of hardness present in water. 6M

UNIT-V

9. (a) Discuss the general methods of distribution of water employed in Municipal water supply scheme. 8M
 (b) Explain about the analysis of distribution networks in water distribution and supply to buildings. 6M

(OR)

10. (a) Explain in detail about Various pipe fitting with neat sketches. 7M
 (b) Explain in detail information on the key requirements of water distribution. 7M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Concrete Technology (CE)

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

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

UNIT - I

1. (a) Write short notes on Hydration of cement. 5M
(b) Explain about various types of cement. 9M
(OR)

2. (a) Write a short note on mineral admixtures 7M
(b) Write a short note on chemical admixtures 7M

UNIT – II

3. (a) Explain the Alkali aggregate reaction and also the method to control it. 7M
(b) Explain Classification of Aggregate in detail. 7M
(OR)

4. (a) Explain Workability. What are the various factors that affect workability? 7M
(b) Discuss about the segregation and bleeding in concrete. 7M

UNIT – III

5. (a) What is Modulus of elasticity of concrete? 6M
(b) Define Creep of concrete. What are the various factors influencing on Creep? 8M
(OR)

6. (a) Write a short note on Permeability of concrete and its effect on the concrete properties. 7M
(b) Explain Thermal Properties of concrete. 7M

UNIT – IV

7. (a) Define Maturity of concrete. 5M
(b) Explain the various methods of curing of concrete. 9M
(OR)

8. Write a brief note on compression test, flexural strength test and split tensile strength of concrete. 14M

UNIT-V

9. (a) Explain about the absolute volume method. 7M
(b) Explain ACI method of mix design 7M
(OR)

10. Prepare a mix-design using IS method for M25 for moderate condition, with specific gravity of cement, fine aggregate and coarse aggregate of 3.13, 2.58 and 2.78 respectively. Slump required is medium, zone of sand is II. 14M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Hydrology (CE)

Time: 3 Hours

Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

UNIT - I

1. (a) Discuss various practical applications of hydrology 7M
 (b) A catchment area is in the form of an equilateral triangle ABC of side 10 km. Four rain gauge stations are located at A, B, C and D. Station D is at the centroid of the triangle. The average annual precipitations observed at these stations are 1145, 1252, 1184, and 1056 mm respectively. Find the average annual precipitation of the catchment area by arithmetic mean and Thiessen polygon methods 7M

(OR)

2. (a) Explain briefly the types and forms of precipitation 7M
 (b) What is meant by Probable Maximum precipitation? Describe the methods of estimating PMP. What are its design applications? 7M

UNIT - II

3. (a) Define pan coefficient. Discuss the relative merits and demerits of sunken, floating and land pans 7M
 (b) Discuss the factors affecting infiltration 7M

(OR)

4. (a) Bring out the difference between evaporation, transpiration, evapotranspiration and consumptive use 7M
 (b) A six hour storm produced rainfall intensities of 5, 16, 25, 10, 12 and 3 mm/hr in successive one hour intervals over a basin of 800 km². The resulting runoff is observed to be 2640 hectare-meters. Determine ϕ -index for the basin 7M

UNIT - III

5. (a) Define runoff. Discuss in detail, the various factors affecting runoff 8M
 (b) A 3 hr storm produced a flood hydrograph as given below: 6M
 Time (hr) : 0 3 6 9 12 15 18 21 24 27 30
 Discharge (m³/s): 4 9 12 18 20 16 20 10 8 6 4
 Assuming a constant base flow of 4 m³/s, determine the ordinates of unit hydrograph. The catchment area is 50 km²

(OR)

6. (a) Define hydrograph. Draw a single peaked hydrograph and explain its components 7M
 (b) What is S-hydrograph? How it is constructed and what are its uses 7M

UNIT - IV

7. (a) Enumerate the various methods which can be used for estimating design flood discharge from a catchment and discuss one of these methods in detail 7M
 (b) Define flood routing. What are the uses of flood routing? 7M

(OR)

8. (a) Describe the method of regional flood frequency analysis for constructing flood frequency curve of an un gauged catchment 7M
 (b) Derive the Muskingum routing equation and the expressions for the routing coefficients C₀, C₁ and C₂ 7M

UNIT-V

9. (a) Define the following terms with suitable examples 8M
 i) Aquifer ii) Aquiclude iii) Aquifuge iv) Aquitard
 (b) During a recuperation test, the water level in an open well was depressed by pumping by 2 m and it is recuperated by 1.5 m in 1 hour. Determine the yield from a well 2 m in diameter under a depression head of 2 m situated in the same area 6M

(OR)

10. (a) Explain Darcy's law. What is its assumption? Discuss its validity 6M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Geo-Technical Engineering - II (CE)

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

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

UNIT - I

1. (a) What are the phases in a complete subsurface exploration and explain them in detail. 7M
(b) How would you obtain a hand-carved sample? 7M

(OR)

2. (a) Discuss about methods of Boring. 10M
(b) Describe split spoon sampler. 4M

UNIT – II

3. (a) Define earth pressure and lateral earth pressure and explain the various types of lateral earth pressure with neat sketches. 7 M
(b) Explain the pressure variation of earth pressure with figure. 7 M

(OR)

4. Derive the expression for active earth pressure in cohesion less soils using coulombs theory 14 M

UNIT – III

5. (a) Bring out clearly the effect of ground water table on the safe bearing capacity. 7 M
(b) What are the differences between Terzaghi bearing capacity theory and Meyerhof bearing capacity theory. 7 M

(OR)

6. (a) Describe the procedure of determining the safe bearing capacity based on the standard penetration test 7 M
(b) A 1.8 m square column is founded at a depth of 1.8m in sand, for which the corrected N - value is 24. The water table is at a depth of 2.7m. Determine the net allowable bearing pressure for a permissible settlement of 40mm and a factor of safety of 3 against shear failure. 7 M

UNIT – IV

7. (a) Explain different classifications of piles with neat sketches. 7 M
(b) Discuss how pile load test can be conducted and the results are interpreted in design. 7 M

(OR)

8. (a) What are the advantages and disadvantages of Driven piles. 7 M
(b) A 30 cm dia. Pile penetrates a deposit of soft clay 9m deep and rests on sand. Compute the skin friction resistance. The clay has a unit cohesion of 0.6 kg/cm² . Assume an adhesion factor of 0.6 for the clay. 7 M

UNIT-V

9. (a) What is Taylor's stability number? How do you use the stability chart. 7 M
(b) Give the step by step procedure for analyzing the stability of the upstream slope of an earth dam by the Swedish method of slices. Bring out the effect of sudden draw down on the stability of slope 7 M

(OR)

10. (a) How do you distinguish a finite slope from an infinite slope? What are the various types of failures that are likely to occur in finite slopes? Under what circumstances do they occur? Explain with sketches. 7 M
(b) How a slope is analyzed using Swedish circle method? Derive an expression for the factor of safety. 7 M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Mechanics of Materials - II (CE)

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

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

UNIT - I

1. A rectangular steel bar is subjected to a tensile stress of 100 MPa as well as shear stress of 40MPa. Determine the principal stresses and the principal planes. Also find, what stress acting alone can produce the same strain. Take $\mu = 0.3$. **14M**

(OR)

2. Determine the diameter of a bolt which is subjected to an axially pull of 12 kN together with a transverse shear force of 6 kN, when the elastic limit in tension is 300 N/mm^2 , factor of safety =3 and poisson's ratio =0.3 using **14M**
- Maximum principal stress theory
 - Maximum principal strain theory
 - Maximum shear stress theorem
 - Maximum strain energy theory
 - Maximum shear strain energy theorem.

UNIT – II

3. Determine the maximum and minimum hoop stress across the section of a pipe 400mm internal diameter and 100mm thick, when the pipe contains fluid at a pressure of 8 N/mm^2 . Also sketch the radial pressure distribution and hoop stress distribution across the section. **14M**

(OR)

4. (a) Derive Lamé's theorem. **6M**
(b) A hollow cylinder has an external diameter of 250mm, and thickness of the wall is 50mm. The cylinder is subjected to an internal pressure = 35MPa and external pressure = 3.5MPa. Calculate the maximum and minimum circumferential and plot the variation of the same across the wall thickness. **8M**

UNIT – III

5. A hollow column of cast iron whose outside diameter is 200mm has thickness of 20mm. It is 4.5m long and is fixed at both ends. Calculate the safe load by Rankine's formula using a factor of safety of 4. Compute the slenderness ratio and compare Euler's and Rankine's critical loads. **14M**
Take critical stress = $\sigma_c = 550 \text{ N/mm}^2$

$$\text{Rankine's constant} = \alpha = \frac{1}{1600}, \quad \text{Elastic modulus} = E = 8 \times 10^4 \text{ N/mm}^2.$$

(OR)

6. (a) State the assumptions made in Euler's theory. Also mention the limitation of Euler's theory. **7M**
(b) Derive the Euler's equation for buckling load of an elastic column with both ends pinned or hinged. **7M**

UNIT – IV

7. (a) Sketch the core of a rectangular section and a circular section with salient values. **4M**
(b) A masonry dam of trapezoidal section is 10 m high. It has top width of 1m and bottom width of m. The face exposed to water has a slope of 1 horizontal to 10 vertical. Calculate the pressure intensities at the base if the dam retains Water to a height of 9 m. Specific weight of masonry is 20 kN/m^3 . **10M**

(OR)

8. A simply supported beam 100mm X 200mm carries a central concentrated load W. The permissible stress in bending and shear are 15MPa and 1.2MPa respectively. Determine the safe load if the span of beam is 3m. **14M**

UNIT-V

9. A rectangular section of 90 mm wide and 130 mm deep is subjected to a bending moment of 15 kNm. The trace of plane of loading is inclined at 45° to YY axis of the section. Locate neutral axis and find the maximum stress induced in the section. **14M**

(OR)

10. Find the centroidal principal moments of inertia of an unequal 'L' angle section **14M**
 $70 \times 50 \times 7 \text{ mm}$

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Signals and Systems (EEE)

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

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

UNIT - I

1. (a) Elucidate the basic operations on signals with examples **7 M**
(b) Explain Signal approximation using orthogonal functions **7M**
(OR)
2. (a) Discuss the representation of function by a set of mutually orthogonal functions **7M**
(b) Describe Dirichlet's conditions with necessary equations **7M**

UNIT – II

3. State and Prove any five properties of Fourier transforms **14 M**
(OR)
4. (a) Find Fourier transform of $\cos \omega_0 t$ and sketch its spectrum. **7M**
(b) Find the Fourier transform of $x(n)=n(n-1)u(n)$. Draw its magnitude spectrum **7 M**

UNIT – III

5. Describe the classification of systems with examples **14 M**
(OR)
6. (a) Explain distortion less transmission through LTI system **7 M**
(b) What is LTI system? Explain Transmission of signals through LTI systems **7 M**

UNIT – IV

7. State and prove sampling theorem for band limited signals. **14 M**
(OR)
8. (a) What is aliasing ? What are the effects of under-sampling **5 M**
(b) Discuss about Reconstruction of signal from its samples **9M**

UNIT-V

9. (a) State and prove z –transform time reversal property **7 M**
(b) Find the inverse z – transform of: $X(z) = (1/1 + 2z) + (2z/z - 0.25)$ **7 M**
(OR)
10. (a) Derive the relation between Laplace transform and Fourier transform of continuous time signal $x(t)$ **7 M**
(b) Use the convolution theorem of Laplace transform to find $y(t)= x_1(t) * x_2(t)$ where $x_1(t) = \cos(4t) u(t)$ and $x_2(t) = \sin(2t) u(t)$. **7M**

Q.P. Code: 356612

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Electrical Machines - III (EEE)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. (a) Derive EMF equation of Alternator. 5M
(b) What is armature reaction? Explain the effect of armature reaction on the terminal voltage of an alternator for various types of loads with necessary diagrams. 9M

(OR)

2. (a) What are harmonics and how are they affecting the generated EMF of a alternator. 4M
(b) With the help of necessary diagrams, explain how the voltage regulation is determined through ZPF method. 10M

UNIT – II

3. Define X_d and X_q . Discuss how they are determined with slip test. 14M

(OR)

4. Define and derive expressions for Synchronous power and Synchronous torque for a salient pole synchronous machine. 14M

UNIT – III

5. (a) What is an Infinite Bus? State the characteristics of it. 5M
(b) Discuss about various methods of Synchronizing of Alternators. 9M

(OR)

6. (a) With the help of phasor diagrams, discuss the effect of change of excitation at constant mechanical input when alternators are connected in parallel. 7M
(b) Explain the general procedure for paralleling of alternators and its advantages. 7M

UNIT – IV

7. (a) Define hunting. How can we reduce this effect? Explain. 7M
(b) Discuss the methods used to start a synchronous motor. 7M

(OR)

8. The full load current of a 3.3 kV Star connected synchronous motor is 160 A at 0.8 lagging pf. The resistance and synchronous reactance of the motor are 0.8 ohm/phase and 5.5 ohms/phase respectively. Calculate the excitation EMF, Torque angle, efficiency and the shaft output power of the Motor. Assume the mechanical stray losses are 30kw. 7M

UNIT-V

9. (a) Why 1-phase induction motor is not self starting motor? Explain. 7M
(b) Discuss about capacitor start and capacitor run induction motor. Sketch its characteristics and mention few applications. 7M

(OR)

10. (a) Explain about construction and working of a shaded pole motor. Also mention its applications. 7M
(b) Write about operating principle of Reluctance motor and its types. 7M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Power Systems - II (EEE)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. (a) Give the classifications of transmission lines. 4M
 (b) Give the analysis of long transmission line by Rigorous method 10M

(OR)

2. (a) Find the regulation and efficiency of medium transmission line by nominal T method 7M
 (b) A 100 kilometres long, 3 phase, 50 Hz, transmission line has following line constants 7M
 Resistance/phase/km = 0.1Ω , Reactance/phase/km = 0.5Ω Susceptance/phase/km = 10×10^{-6} .
 If the line supplies load of 20 MW at 0.9 p.f. lagging at 66 kV at the receiving end, calculate by nominal π method:
 i) Sending end power factor ii) Regulation and iii) Transmission efficiency

UNIT – II

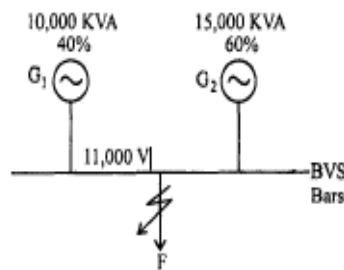
3. (a) Generator-1 : 50 MVA, 11 kV, $X = 4\Omega$, Generator-2 : 75 MVA, 13.2 kV, $X = 5\Omega$ and 7M
 Generator-3 : 100 MVA, 15 kV, $X = 6\Omega$. Find p.u. reactance at 250 MVA and 22 kV as base values.
 (b) Two generators rated at 10 MVA, 11 kV and 15 MVA, 11 kV respectively are connected in 7M
 parallel to a bus. The bus bars feed two motors rated 7.5 MVA and 10 MVA respectively. The rated voltage of the motors is 9 kV. The reactance of each generator is 12% and that of each motor is 15% on their own ratings. Assume 50 MVA, 10 kV base and draw the reactance diagram.

(OR)

4. (a) A 100 MVA, 13.8 kV, 3- ϕ generator has a reactance of 20%. The generator is connected to a 10M
 3- ϕ transformer T_1 rated 100 MVA 13.8 kV / 110 kV with 10% reactance. The H.V. side of the transformer is connected to a transmission line of reactance 100Ω . The far end of the line is connected to a step down transformer T_2 100 MVA, 110/10 kV with 10% reactance the generator supplies two motors connected on the L.V. side T_2 . The motors are rated at 25 MVA and 50 MVA both at 10 kV with 15% reactance. Draw the reactance diagram showing all the values in per unit. Take generator rating as base.
 (b) Represent the synchronous motor in single line diagram. 4M

UNIT – III

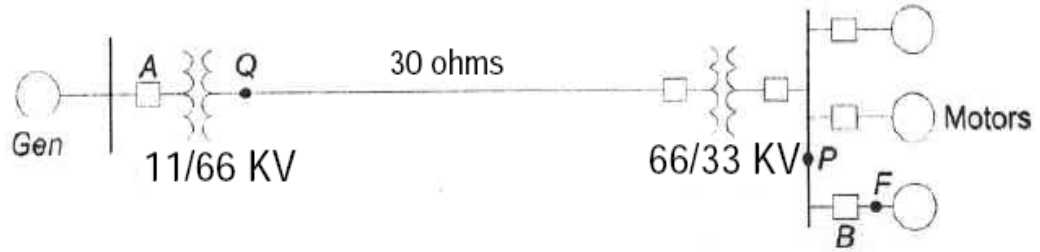
5. (a) Consider the system shown in fig. The percentage reactance of each alternator is expressed on 7M
 its own capacity. Determine the short circuit current that will flow into a dead three phase short circuit at F.



- (b) The line currents in amperes in phase a, b and c respectively are $500 + j150$, $100 - j600$ and $-300 + j600$ referred to the same reference vector. Find the symmetrical component of currents. 7M

(OR)

6. A 100 MVA, 11 kV generator with $X'' = 0.20$ p.u is connected through a transformer and line 14M
to a bus bar that supplies three identical motor as shown in fig. and each motor has $X'' = 0.20$
p.u and $X' = 0.25$ p.u on a base of 20 MVA, 33 kV. The bus voltage at the motors is 33 kV.
The two transformers are identical with 100 MVA rating having a reactance of 0.1 p.u . when
a three phase balanced fault occurs at the point F.



- Calculate: (a) Momentary current in the circuit breaker B
(b) The current to be interrupted by CB B in (i) 1st cycle (ii) 3rd cycle (iii) 5th cycle.

UNIT – IV

7. (a) Prove that all sequence networks are connected in anti-parallel in case of LL-G fault and obtain the expression for fault current. 7M
(b) The short circuit currents are $IR1 = -j4.5$ p.u , $IR2 = j3.0$ p.u and $IR0 = j1.5$ p.u. 7M
Identify the type of fault and make a comment on it.

(OR)

8. Explain the effect of short circuit on transmission line with appropriate wave forms. 14M

UNIT-V

9. (a) Explain the effect of solid grounding on power system network and where it is preferred. 7M
(b) What are the advantages of neutral grounding? 7M

(OR)

10. Explain isolated neutral system. 14M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Power Electronics (EEE)

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

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

UNIT - I

1. (a) Define the following terms from the V-I characteristics of SCR 4M
(i) Break Over voltage (ii) Latching current (iii) Holding current (iv) Forward voltage.
(b) Latching current for SCR inserted between a DC voltage source of 200V and a load is 100mA. Compute the minimum width of gate pulse current required to turn-on this SCR in case the load consists of (a) $L=0.2H$ (ii) $R=20\Omega$ in series with $L=0.2H$ 10M

(OR)

2. (a) Define (i) string efficiency (ii) Derating factor in series and parallel operation of SCR's. 4M
(b) Design the snubber circuit resistance and capacitance. 10M

UNIT - II

3. (a) Explain the effect of source inductance on single phase fully controlled bridge converter. Derive the expression for average output voltage. 10M
(b) Compare Two quadrant and Four quadrant converters 4M

(OR)

4. (a) Explain the operation of single phase half controlled converter with R Load. Derive the expression for average and RMS output voltages. 7M
(b) The single phase half controlled converter is connected to 120V, 50Hz supply. The load current can be assumed continuous and ripple free. If delay angle is 90° . Calculate (i) V_{dc} (ii) V_{rms} 7M

UNIT - III

5. (a) Explain the operation of single phase AC voltage controller with R load. Derive the expression for RMS load voltage. 7M
(b) An AC voltage controller with resistive load of 10 ohms and input voltage of 230V, 50Hz. If the desired power is 1kW, determine : (i) Delay angle (ii) RMS output voltage (iii) input power factor 7M

(OR)

6. (a) Explain the operation of single phase bridge type cyclo-converter with RL load. 7M
(b) 7M
Compare Single Phase AC voltage controllers with SCR and TRIAC for R and RL Load

UNIT - IV

7. (a) Classify various types of chopper with applications. 6M
(b) Explain the operation of Class D choppers with relevant output voltage waveforms. 8M

(OR)

8. (a) Explain various control strategies of chopper. List some applications of choppers. 6M
(b) Explain the principle of operation of Buck Boost chopper with relevant output waveforms. 8M

UNIT-V

9. (a) Explain the principle and operation of single phase series inverter with relevant waveforms. 7M
(b) Explain the principle of space vector modulation technique for single phase inverters 7M

(OR)

10. (a) Explain about complementary commutation technique for single phase bridge inverters. 7M
(b) Discuss about multiple PWM technique by taking sinusoidal wave as reference. 7M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Control Systems (EEE)

Time: 3 Hours

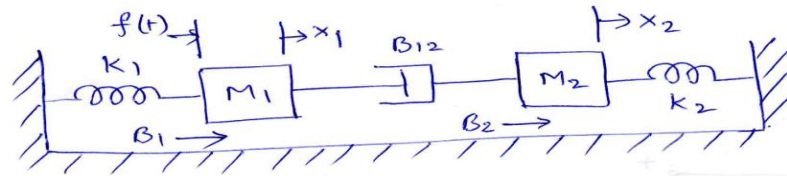
Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

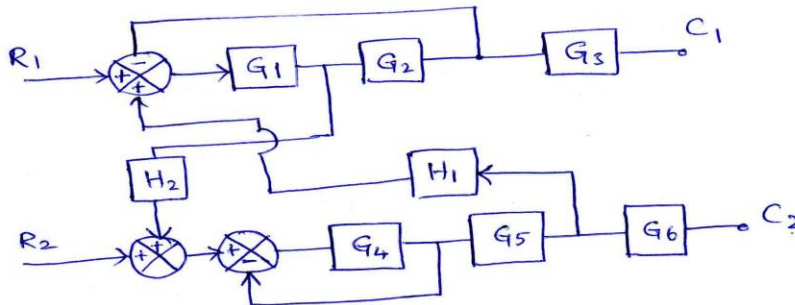
UNIT - I

1. (a) Explain the open loop and closed loop temperature control systems. 6M
 (b) Determine the transfer function $\frac{X1(s)}{F(s)}$ and $\frac{X2(s)}{F(s)}$ for the system shown in figure. 8M



(OR)

2. (a) Write the elements in Force- Voltage and Force- Current analogy. 8M
 (b) Find the closed loop transfer functions $C1/R1$ and $C2/R2$ of the system. 6M



UNIT - II

3. (a) Derive the expression for time response of undamped for unit step input of second order system having unity feedback and $G(s) = \frac{\omega_n^2}{s^2 + 2\zeta\omega_n s}$. 9M
 (b) What are generalized error coefficients and give the relation between generalized and static error coefficients. 5M

(OR)

4. (a) Derive the expressions for Rise time and Settling time in the time domain specifications. 8M
 (b) Discuss the effect of PD and PI on performance of a control system. 6M

UNIT - III

5. (a) Test the stability of the system with the following characteristic equation by $9s^5 - 20s^4 + 10s^3 - s^2 - 9s + 10 = 0$ 8M
 (b) Define asymptotes, centroid, breakaway and breakin points in root locus. 6M

(OR)

6. A unity feedback control system has an open loop transfer function $G(s) = \frac{K}{s(s^2 + 4s + 13)}$ 14M
 sketch the root locus.

UNIT - IV

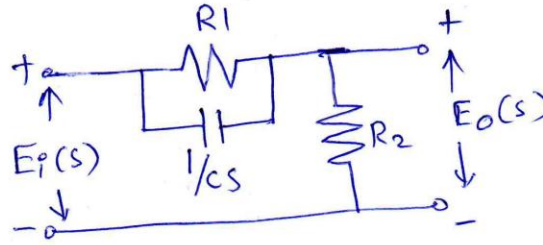
7. $G(s) = \frac{Ke^{-0.2s}}{s(s+2)(s+8)}$ Find the K value so that the system is stable with gain margin equal to 2dB and phase margin equal to 45° . 14M

(OR)

8. The open loop transfer function of a unity feedback system is given by $G(s) = \frac{1}{s^2(1+s)(1+2s)}$ sketch the Nyquist plot and determine the gain margin and phase margin. 14M

UNIT-V

9. Obtain the frequency response of lead compensator electric circuit 14M



(OR)

10. A unity feedback system has an open loop transfer function, $G(s) = \frac{K}{s(1+2s)}$. 14M

Design a suitable lag compensator so that phase margin is 40° and the steady state error for the ramp input is less than or equal to 0.2.

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Managerial Economics & Financial Analysis (EEE)

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

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

UNIT – I

1. What is Managerial Economics? Explain nature and scope of Managerial Economics. 14M
(OR)

2. Describe the Elasticity of Demand and its types. 14M

UNIT – II

3. Discuss Cobb-Douglas production function with an example 14M
(OR)

4. Explain various cost concepts with suitable illustrations 14M

UNIT – III

5. Discuss the price-output determination under monopolistic competition. 14M
(OR)

6. What is pricing? Explain differential pricing with suitable examples 14M

UNIT – IV

7. What is Joint stock company? Explain its Features, advantages and disadvantages 14M
(OR)

8. A company has to select one of the two following projects. The life of the two projects is 5 years. Both the project requires Rs. 1, 25,000 as an investment. The cash inflows of Project –M are Rs 24,000; Rs 32,000; Rs 37,000; 40,000 and Rs 25,000 respectively Project –N are Rs 22,000; Rs 50,000; Rs 20,000;28,000 and Rs 30,000 respectively Calculate Profitability Index and NPV of both the projects 14M

UNIT-V

9. Journalise the following transactions and post them into ledger 2020. 14M

Apr1 Received cash Rs 50,000

Apr 8 Purchased goods from Seshu Rs 25,000

Apr 17 Sold goods to vamsi Rs 50,000

Apr 28 Paid cash to Seshu Rs 25,000

Apr 30 Cash received from Vamsi Rs 45,000

(OR)

10. Fixed Assets Rs 22,00,000 14M

Working Capital Rs 8,00,000

Equity shares of Rs 50 each Rs10,00,000

Market Price of Equity share Rs 60

10% Debentures 8,00,000.

Total Assets Rs. 10,00,000

Tax rate 50%.

PBIT Rs 12,00,000.

Calculate:

1. Return On Investment
2. Return On Total Assets
3. Earnings Per Share
4. Price Earnings Ratio

Q.P. Code: 456412

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Digital IC Applications (ECE)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. (a) Explain the terms (i) DC noise margin (ii) Fan-out with reference to TTL gate. **7M**
(b) With the help of timing waveforms, explain read and write operations of static RAM. **7M**

(OR)

2. (a) What is the necessity of separate interfacing circuit to connect CMOS gate to TTL gate? **7M**
Draw the interface circuit and explain the operation.
(b) Explain how a CMOS device is destroyed? **7M**

UNIT – II

3. (a) Explain the difference in program structure of VHDL and any other procedural language. **7M**
Give an Example.
(b) Explain the behavioural design model of VHDL. **7M**

(OR)

4. (a) What are different data types available in VHDL? Explain. **7M**
(b) Explain the structure of various LOOP statements in VHDL with examples. **7M**

UNIT – III

5. (a) Write the syntax of a VHDL component declaration and by making use of component declaration write a VHDL program for a prime-number detector. **7M**
(b) Design a 10 to 4 encoder with inputs 1 – out of 10 and outputs in BCD. Provide the data flow style VHDL program. **7M**

(OR)

6. (a) What is the function of 74XX151 IC, write symbol, functional table. **7M**
(b) Design 32:1 multiplexer using 74X151. **7M**

UNIT – IV

7. (a) Design a two bit comparator circuit and explain its operation. **7M**
(b) Draw the circuit diagram of Floating-Point Encoder with relevant digital IC and explain its operation. **7M**

(OR)

8. Explain the operation of barrel shifter and write a VHDL program for the above. **14M**

UNIT-V

9. (a) Design a 8 – bit serial-in-parallel-out shift register with flip-flops. Explain the operation with the help of timing waveforms. **7M**
(b) Write VHDL data-flow program for the above shift register **7M**

(OR)

10. (a) Design a Ring counter and explain its operation. **7M**
(b) Write VHDL data-flow program for the above Ring counter **7M**

Q.P. Code: 456612

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Computer Organization (ECE)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. Describe briefly about software. Explain in detail the parameters to measure performance of a computer. 14M

(OR)

2. Explain in detail about Bus and Memory transfers with a neat sketch. 14M

UNIT – II

3. Explain briefly about various phases of instruction cycle with a neat sketch. 14M

(OR)

4. Explain in detail about address sequence, mapping of instructions with examples. 14M

UNIT – III

5. Explain various addressing modes in detail with example. 14M

(OR)

6. Explain in detail about parallel processing. 14M

UNIT – IV

7. Explain Asynchronous data transfer in detail with example. 14M

(OR)

8. Explain in detail Direct Memory Access (DMA) process. 14M

UNIT-V

9. Explain briefly about the memory organization in computer system. 14M

(OR)

10. Explain in detail about Inter processor communication and synchronization. 14M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Antenna and Wave Propagation (ECE)

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

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

UNIT - I

1. (a) Explain the significance of the terms “Effective Area” of an antenna. How is this related to gain of the antenna. **7M**
(b) An antenna has a radiation resistance of 72Ω a loss resistance of 8Ω and a power gain of 12 db , Determine antenna efficiency and its directivity. **7M**

(OR)

2. (a) Explain the terms “Directivity gain” and “Radiation Efficiency” with reference to antennas. Are gain and bandwidth are related? If so explain how. **7M**
(b) A receiving antenna picks up 50μ volts signal. The transmitting station switches to a nearby antenna which has a 5 db gain over the original antenna. How much is the new signal picked up by the receiving station **7M**

UNIT – II

3. (a) What are broadside and end-fire arrays? Derive the expression for the array factor of linear broadside array of n elements. **7M**
(b) An end-fire array composed of $\lambda/2$ radiators with axes at the right angles to the line of the array required to have a power gain of 20. Determine the array length and width of a major lobe between the nulls. Derive the formula used. **7M**

(OR)

4. (a) Draw neat diagrams to illustrate the following and briefly explain their important features: **8M**
(i) Directional characteristics of a board-side array and its use
(b) A linear broadside array consists of four equal isotropic point sources with $\lambda/3$ spacing (overall length of the array = λ). Calculate and plot the field pattern(rough). Find the directivity and beam width. **6M**

UNIT – III

5. (a) Describe a horn antenna. How this antenna fed and what is are its application? **7M**
(b) A parabolic antenna having a circular mouth is to have a power gain of 1000 at $\lambda=10\text{cm}$. Estimate the diameter of the mouth and the half-power beamwidth of the antenna. **7M**

(OR)

6. (a) Describe the methods for measuring the gain and half-power beamwidth of an antenna. **7M**
(b) Write short notes on microstrip antenna. **7M**

UNIT – IV

7. (a) Discuss the effects of the earth’s properties on ground wave propagation. **7M**
(b) A high frequency radio link has to be established between two points on the earth 200 km away. The reflection region of the ionosphere is at height of 200 km and has a critical frequency of 6 MHz. Calculate the MUF for the given path. **7M**

(OR)

8. Discuss the effects of the electrical properties of earth’s surface on ground wave propagation. How does ground wave propagation help communication at low and medium frequencies? **14M**

UNIT-V

9. a) With reference to sky waves, explain the following: **7M**
(i) Skip Distance (ii) MUF
b) Discuss the salient features of sky wave propagation. Bring out the various problems associated with this mode of propagation. **7M**

(OR)

10. Write an essay on “ground wave propagation” and show that it is affected by the terrain and the earth’s curvature. **14M**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Digital Communications (ECE)

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

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

UNIT - I

1. (a) With neat block diagram, Explain the process of Sampling and Quantization in digital communication. **7M**
(b) Derive the expression for the Quantization error **7M**
(OR)
2. (a) With the help of neat block diagram, explain the Differential PCM. **7M**
(b) Explain the working principle of TDM. **7M**

UNIT – II

3. (a) Represent the binary sequence 101101110 using the following formats **7M**
i) Unipolar Return to Zero ii) Bipolar
(b) Determine the bandwidth required for M-ary FSK system. **7M**
(OR)
4. (a) Write short note on Nyquist criterion and its importance. **7M**
(b) Explain the characterization of band-limited channels. **7M**

UNIT – III

5. (a) State and prove Shannon Hartley theorem. **7M**
(b) Explain the block diagram of digital communication systems **7M**
(OR)
6. (a) Explain about Huffman coding. **7M**
(b) Explain in detail about binary symmetric channel and find its channel capacity. **7M**

UNIT – IV

7. (a) Write short notes on Hamming codes. **7M**
(b) Explain the trellis diagram decoding using Viterbi decoding algorithm. **7M**
(OR)
8. (a) Explain about Error detection and Correction capabilities of Hamming codes. **7M**
(b) Explain the procedure of Binary cyclic codes with one example **7M**

UNIT-V

9. (a) Explain frequency shift keying. Describe coherent detection of FSK signals. **7M**
(b) Derive the bit error probability of a coherent ASK signaling scheme. **7M**
(OR)
10. (a) Differentiate coherent and non-coherent detection techniques. **7M**
(b) Explain the properties of the matched filter **7M**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Linear IC Applications (ECE)

Time: 3 Hours

Max. Marks: 70

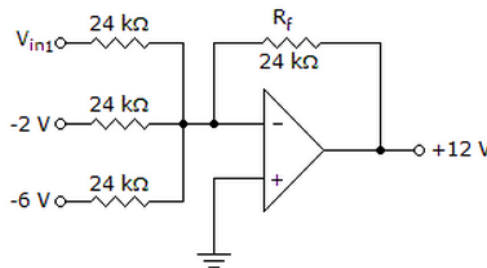
Answer any FIVE Questions choosing one question from each unit.
All questions carry Equal Marks.

UNIT - I

1. (a) List out the characteristics of ideal and Practical Operational Amplifiers 7M
 (b) Determine the output voltage of an op-amp for the input voltages of $V_{in1}=150\mu V$, $V_{in2}=140\mu V$. This amplifier has a differential gain of 4000 and the value of CMRR is 10^5 . 7M
 (OR)
2. (a) Explain the following Characteristics Of Op-Amp 8M
 i. Input Offset Current
 ii. Slew Rate
 iii. Temperature Coefficients
 iv. Gain Bandwidth Product
 (b) Discuss about dc analysis of Dual Input Balanced Output amplifier 6M

UNIT - II

3. (a) In the given figure determine input V_{in1} 7M



- (b) Explain how an operational amplifier can be used as summing amplifier. 7M
 (OR)
4. (a) How the operational amplifier can be used as a Differentiator and Integrator. 7M
 (b) Design I to V converter using op-amp and explain how it can be used to measure the output of a photocell. 7M

UNIT - III

5. (a) Design First order LPF for a cut off frequency 1KHz 7M
 (b) Explain the Operation of Monostable Multivibrator with neat wave form sketches. 7M

(OR)

6. (a) What are the advantages of Active filter over the passive filter? Explain. 7M
 (b) Draw the circuit diagram of Schmitt trigger using Op-amp and explain its operation. 7M

UNIT - IV

7. (a) Design RC phase shift oscillator to oscillate at 100 Hz. Assume $C=0.1\mu F$ 7M
 (b) Describe two methods to achieve 50% duty cycle in 555 Timer Astable Multivibrator. 7M

(OR)

8. (a) Derive an expression for the voltage to frequency conversion factor of 566 VCO. 7M
 (b) Draw the block diagram of PLL and explain how it works. 7M

UNIT-V

9. (a) Explain the working of R-2R Ladder Network DAC 8M
 (b) Why successive approximation ADC is preferable than parallel comparator ADC? Explain. 6M

(OR)

10. (a) Explain the following terms with respect to ADC 6M
 i. Accuracy
 ii. Quantization error
 iii. Resolution
 (b) Draw the diagram for 3-bit flash ADC and Explain its operation 8M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Microprocessors and Interfacing (ECE)

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

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

UNIT - I

- | | | | |
|----|-----|--|-----|
| 1. | (a) | Explain the internal architecture of 8085 microprocessor with block diagram | 12M |
| | (b) | List various registers in 8085 Microprocessor | 2M |
| | | (OR) | |
| 2. | (a) | Explain different addressing modes supported by 8085 microprocessor | 6M |
| | (b) | Explain the various arithmetic instructions available in 8085 microprocessor | 8M |

UNIT – II

- | | | | |
|----|-----|--|-----|
| 3. | (a) | Explain the internal architecture of 8086 microprocessor with block diagram | 12M |
| | (b) | List various registers in 8086 Microprocessor | 2M |
| | | (OR) | |
| 4. | | Explain in detail about Minimum and Maximum Mode of 8086 with neat timing diagrams | 14M |

UNIT – III

- | | | | |
|----|-----|---|----|
| 5. | (a) | Describe in detail about Assembler Directives? | 8M |
| | (b) | Write an ALP Program to find the addition, subtraction of any two numbers? | 6M |
| | | (OR) | |
| 6. | (a) | Write an ALP Program to sort a series of 5 numbers in ascending and descending order? | 8M |
| | (b) | Write short notes on Lookup tables | 6M |

UNIT – IV

- | | | | |
|----|-----|---|----|
| 7. | (a) | Explain various Data transfer schemes | 8M |
| | (b) | Explain Mode set register of programmable DMA controller 8257 | 6M |
| | | (OR) | |
| 8. | (a) | Explain internal block diagram of 8251 USART | 8M |
| | (b) | Explain the CWR of programmable interval timer | 6M |

UNIT-V

- | | | | |
|-----|-----|---|----|
| 9. | (a) | Write an ALP to rotate the rotor of the stepper motor for 135 ⁰ in clockwise direction | 8M |
| | (b) | Write an ALP to generate Sawtooth waveform using DAC | 6M |
| | | (OR) | |
| 10. | (a) | Explain in detail about Address decoding techniques | 6M |
| | (b) | Explain in detail about Traffic Light controller | 8M |

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Industrial Management (ME)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. (a) Define plant location. Discuss the factors affecting location of a plant in a geographical area. 7M
 (b) Define material handling. List the principles of material handling. 7M
 (OR)
 2. Define plant layout. Describe the characteristics, advantages, disadvantages and applications of different types of layouts. 14M

UNIT – II

3. (a) Define work study. Explain the basic procedure of conducting work study. 7M
 (b) Explain the principles of motion economy as related to the arrangement of workplace. 7M
 (OR)
 4. (a) List various types of charts and diagrams used in method study. Explain the objectives, types and applications of each chart. 7M
 (b) Explain the principles of motion economy as related to the use of human body. 7M

UNIT – III

5. (a) What is performance rating? Discuss different methods of performance rating. 7M
 (b) In a time study for a job done by a worker whose rating is 90, the data are as follows Observed time = 20 minutes, Personal needs allowance 4% of Basic time, Fatigue allowance = 2.5% of Basic time, Contingency work allowance = 2% of Basic time Contingency delay allowance = 1% of Basic time. Find (i) Basic time, (ii) work content, and (iii) Standard time 7M
 (OR)
 6. (a) Define time study. Explain the procedure of time study. 7M
 (b) Define work sampling. Discuss the steps involved in work sampling study. 7M

UNIT – IV

7. Solve the following PERT problem. 14M
 a) Construct the project network. Find expected duration and variance of each activity.
 b) Determine the critical path and expected project duration.
 c) What is the probability of completing the project on or before 20 weeks?
 d) If the probability of completing the project is 0.8, find the expected project duration.

Task	A	B	C	D	E	F	G	H
Precedence	-	-	A	B	A	C,D	C,D,E	F
a	1	2	6	1	1	1	1	1
b	2	2	7	2	4	5	2	2
c	3	8	8	3	7	9	3	9

(OR)

8. (a) For the following data, draw network and determine the Critical Path. Also compute Total float, free float and independent float for non-critical activities. 7M

Task	1-2	1-3	2-3	2-4	3-4	4-5
Duration	20	25	10	12	6	10

- (b) For the following data of a project: (i) Draw the PERT network, find the critical path and project completion time. (ii) Find the probability that the project will take more than 49 time periods to complete. 7M

Activity	A	B	C	D	E	F	G	H
Expected Time	7	3	9	4	5	8	8	6
Std. deviation of time estimate	2	1	3	1	1	2	1	2
Immediate Predecessor	-	A	A	B,C	B,C	E	D,F	G

UNIT-V

9. (a) The following table gives the number of missing rivets noted in newly fabricated buses. Draw a C-chart with 3 sigma limits and comment on the process. 7M

Bus Number	1	2	3	4	5	6	7	8	9	10
No. of Missing rivets (c)	14	13	26	20	9	25	15	11	14	13

- (b) Define inspection. Discuss different types of inspections. 7M

(OR)

10. For each of the 14 days, a number of magnets used in electric relays are inspected and the number of defectives is recorded. The total number of magnets tested is 14,000. The following are the particulars of the number of defectives found every day. Draw the suitable control chart. 14M

Day Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
No.of Defectives	100	50	150	200	150	50	80	120	60	140	50	70	40	140

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Thermal Engineering - II (ME)

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

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

UNIT - I

1. (a) What are the effects of operating conditions on the Rankine efficiency? 4M
(b) A steam power plant is supplied with dry saturated steam at a pressure of 12 bar and exhausts into a condenser at 0.1 bar. Calculate the Rankine efficiency by using 1. Steam tables and 2. Mollier chart. 10M

(OR)

2. (a) Explain the concept of mean temperature of heat addition. 4M
(b) Explain with the help of P - V and T - S diagrams, the sequence of operations in the modified Rankine cycle. 10M

UNIT – II

3. (a) What are the functions of a boiler chimney? 4M
(b) The following observations were made in a boiler trial: Coal used 250 kg of calorific value 29800 kJ/ kg, water evaporated 2000 kg, steam pressure 11.5 bar, dryness fraction of steam 0.95 and feed water temperature 34°C . calculate the equivalent evaporation from and 100°C per kg of coal and the efficiency of the boiler. 10M

(OR)

4. (a) What do you understand by the term “boiler draught”. 4M
(b) Explain the various losses in a boiler and draw the heat balance sheet of a boiler. 10M

UNIT – III

5. (a) What are the functions of nozzles used in steam turbines? 4M
(b) Dry saturated steam at a pressure of 15 bar enters in a nozzle and is discharged at a pressure of 1.5 bar. Find the final velocity of the steam, when the initial velocity of is negligible. 10M

(OR)

6. (a) Explain various types of steam nozzles. 4M
(b) Dry saturated steam at 10 bars is expanded isentropically in a nozzle to 0.1 bars. Using steam tables find the dryness fraction of the steam at exit. Also find the velocity of steam leaving the nozzle when 1.initial velocity negligible and 2.initial velocity of the steam is 135 m/s. 10M

UNIT – IV

7. (a) Define a steam turbine and state its fields of application. 4M
(b) The velocity of steam, leaving the nozzles of an impulse turbine is 1200 m/s and the nozzle angle is 20° . The blade velocity is 375 m/s and the blade coefficient is 0.75. Assuming no loss due to shock at inlet, calculate for a mass flow of 0.5 kg/s and symmetrical blading; i) blade inlet angle, and driving force on the wheel. 10M

(OR)

8. (a) How are the steam turbines classified? 4M
(b) Draw the combined velocity triangle for a single stage reaction turbine and derive an expression for work done per stage. 10M

UNIT-V

9. (a) Define a steam condenser and state its objects. 4M
(b) Explain the principles of operation of different types of jet condensers. 10M

(OR)

10. (a) Explain clearly the term “vacuum”. How is it measured? 4M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Dynamics of Machinery - I (ME)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. (a) What do you understand by Compound gear train and discuss speed ratio and train velocity with suitable diagram? 7M
 (b) Two parallel shafts, about 600 mm apart are to be connected by spur gears. One shaft is to run at 360 r.p.m. and the other at 120 r.p.m. Design the gears, if the circular pitch is to be 25 mm 7M

(OR)

2. (a) How the velocity ratio of epicyclic gear train is obtained by tabular method? 7M
 (b) In an epicyclic gear train, an arm carries two gears A and B having 36 and 45 teeth respectively. If the arm rotates at 150 r.p.m. in the anticlockwise direction about the centre of the gear A which is fixed, determine the speed of gear B. If the gear A instead of being fixed, makes 300 r.p.m. in the clockwise direction, what will be the speed of gear B? use Algebraic method only. 7M

UNIT - II

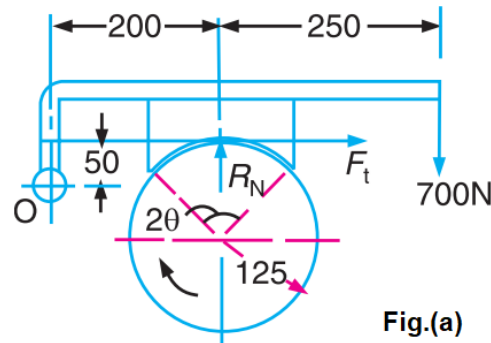
3. (a) Explain following terms: 9M
 (i) Velocity Ratio of belt drive, (ii) Slip of belt, (iii) Creep of belt
 (b) Write the advantages and disadvantages of V-belt Drive Over Flat Belt Drive 5M

(OR)

4. (a) Describe with a neat sketch the working of a single plate friction clutch 7M
 (b) Explain Centrifugal Clutch with neat sketch and write advantages and disadvantages? 7M

UNIT - III

5. (a) A single block brake is shown in Fig. (a). The diameter of the drum is 250 mm and the angle of contact is 90° . If the operating force of 700 N is applied at the end of a lever and the coefficient of friction between the drum and the lining is 0.35, determine the torque that may be transmitted by the block brake. 7M

**Fig.(a)**

- (b) Explain a Differential Band Brake clock and anticlockwise rotation of the drum with suitable diagrams? 7M

(OR)

6. (a) How to classify Transmission dynamometers and explain Epicyclic-train dynamometer? 7M
 (b) Describe the construction and operation of a rope brake absorption dynamometer. 7M

UNIT - IV

7. (a) Draw and explain the Turning moment diagram for a 4 stroke cycle internal combustion engine. 7M
 (b) A horizontal cross compound steam engine develops 300 kW at 90 r.p.m. The coefficient of fluctuation of energy as found from the turning moment diagram is to be 0.1 and the fluctuation of speed is to be kept within $\pm 0.5\%$ of the mean speed. Find the weight of the flywheel required, if the radius of gyration is 2 metres 7M

(OR)

8. (a) Determine following terms: 7M
(a). Coefficient of Fluctuation of Speed, (b) Energy Stored in a Flywheel
(b) The mass of flywheel of an engine is 6.5 tonnes and the radius of gyration is 1.8 metres. It is found from the turning moment diagram that the fluctuation of energy is 56 kN-m. If the mean speed of the engine is 120 r.p.m., find the maximum and minimum speeds. 7M

UNIT-V

9. (a) State the different types of governors. What is the difference between centrifugal and inertia type governors? 7M
(b) In a spring loaded Hartnell type governor, the extreme radii of rotation of the balls are 80 mm and 120 mm. The ball arm and the sleeve arm of the bell crank lever are equal in length. The mass of each ball is 2 kg. If the speeds at the two extreme positions are 400 and 420 r.p.m., find: 1. the initial compression of the central spring, and 2. the spring constant. 7M

(OR)

10. (a) Define and explain the following terms relating to governors: 1. Stability, 2. Sensitiveness, 3. Isochronism, and 4. Hunting. 7M
(b) The following particulars refer to a Wilson-Hartnell governor: Mass of each ball = 2 kg ; minimum radius = 125 mm; maximum radius = 175 mm; minimum speed = 240 r.p.m.; maximum speed = 250 r.p.m.; length of the ball arm of each bell crank lever = 150 mm; length of the sleeve arm of each bell crank lever = 100 mm; combined stiffness of the two ball springs = 0.2 kN/m. Find the equivalent stiffness of the auxiliary spring referred to the sleeve. 7M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Machine Tools (ME)

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

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

UNIT - I

1. (a) Differentiate the orthogonal and oblique cutting? **7M**
(b) How do you specify the lathe? **7M**

(OR)

2. (a) Classify the chip formation during machining and explain them with suitable sketch? **7M**
(b) Differentiate the capstan and turret lathe? **7M**

UNIT – II

3. (a) Sketch and explain the working of horizontal shaping machine? **7M**
(b) How do you specify the planner? **7M**

(OR)

4. Identify the principal parts of the slotter and explain them with suitable sketch? **14M**

UNIT – III

5. (a) Explain the specification of radial drilling machine? **7M**
(b) Differentiate the multiple and gang drilling machine? **7M**

(OR)

6. Sketch and explain the principle, operation of Horizontal boring machine? **14M**

UNIT – IV

7. Explain the primary parts, principle and operation of Horizontal milling machine with suitable sketches? **14M**

(OR)

8. (a) Differentiate the up milling and down milling? **7M**
(b) Classify the various indexing mechanism used in milling and explain any one? **7M**

UNIT-V

9. Sketch and explain the principle and operation of tool and cutter grinding machine? **14M**

(OR)

10. (a) Sketch and explain the principle and operation of horizontal broaching machine? **7M**
(b) Distinguish the grinding, honing and lapping operation with simple sketch? **7M**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Design of Machine Elements - I (ME)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. (a) What are general considerations in designing a machine component? **8M**
 (b) Explain the different phases of design. **6M**

(OR)

2. A hollow shaft of 40 mm outer diameter and 25 mm inner diameter is subjected to a twisting moment of 120 N-m, simultaneously it is subjected to an axial thrust of 10 kN and a bending moment of 80 N-m. Calculate the maximum compressive and shear stresses. **14M**

UNIT - II

3. The load on a bolt consists of an axial pull of 10 kN together with a transverse shear force of 5 kN. Find the diameter of bolt required according to 1. Maximum principal stress theory; 2. Maximum shear stress theory; 3. Maximum principal strain theory; 4. Maximum strain energy theory; and 5. Maximum distortion energy theory. **14M**

(OR)

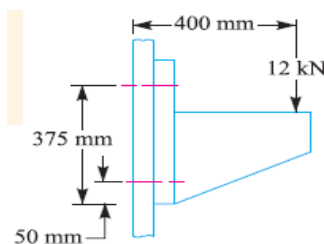
4. A bar of circular cross-section is subjected to alternating tensile forces varying from a minimum of 200 kN to a maximum of 500 kN. It is to be manufactured of a material with an ultimate tensile strength of 900 MPa and an endurance limit of 700 MPa. Determine the diameter of bar using safety factors of 3.5 related to ultimate tensile strength and 4 related to endurance limit and a stress concentration factor of 1.65 for fatigue load. Use Goodman straight line as basis for design. **14M**

UNIT - III

5. (a) What is an eccentric loaded welded joint? Discuss the procedure for designing such a joint. **6M**
 (b) A plate 100 mm wide and 10 mm thick is to be welded to another plate by means of double parallel fillets. The plates are subjected to a static load of 80 kN. Find the length of weld if the permissible shear stress in the weld does not exceed 55 MPa. **8M**

(OR)

6. (a) Define the following terms: **4M**
 (i) Major diameter, (ii) Minor diameter, (iii) Pitch, and (iv) Lead.
 (b) For supporting the travelling crane in a workshop, the brackets are fixed on steel columns as shown in Fig. 1. The maximum load that comes on the bracket is 12 kN acting vertically at a distance of 400 mm from the face of the column. The vertical face of the bracket is secured to a column by four bolts, in two rows (two in each row) at a distance of 50 mm from the lower edge of the bracket. Determine the size of the bolts if the permissible value of the tensile stress for the bolt material is 84 MPa. Also find the cross-section of the arm of the bracket which is rectangular. **10M**



UNIT – IV

7. A shaft is supported on bearings A and B, 800 mm between centres. A 20° straight tooth spur gear having 600 mm pitch diameter, is located 200 mm to the right of the left hand bearing A, and a 700 mm diameter pulley is mounted 250 mm towards the left of bearing B. The gear is driven by a pinion with a downward tangential force while the pulley drives a horizontal belt having 180° angle of wrap. The pulley also serves as a flywheel and weighs 2000 N. The maximum belt tension is 3000 N and the tension ratio is 3 : 1. Determine the maximum bending moment and the necessary shaft diameter if the allowable shear stress of the material is 40 MPa. **14M**

(OR)

8. A cylindrical shaft made of steel of yield strength 700 MPa is subjected to static loads consisting of a bending moment of 10 kN-m and a torsional moment of 30 kN-m. Determine the diameter of the shaft using two different theories of failure and assuming a factor of safety of 2. **14M**

UNIT-V

9. (a) What is a key? State its function. **4M**
(b) A 45 mm diameter shaft is made of steel with a yield strength of 400 MPa. A parallel key of size 14 mm wide and 9 mm thick made of steel with a yield strength of 340 MPa is to be used. Find the required length of key, if the shaft is loaded to transmit the maximum permissible torque. Use maximum shear stress theory and assume a factor of safety of 2. **10M**

(OR)

10. Sketch and explain design procedure for Spigot and cotter joint. **14M**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Heat Transfer (ME)

Time: 3 Hours**Max. Marks: 70****Answer any FIVE Questions choosing one question from each unit.****All questions carry Equal Marks.****UNIT - I**

1. Derive the 3D heat transfer equation in cylindrical co-ordinate system. 14M
(OR)
2. (a) Obtain the expression for composite wall of three layer with convective condition over the wall. 9M
(b) A steam pipe the 10 cm ID and 11 cm OD Covered with an insulating substance ($k=1$ W/mK). The steam temperature and the ambient temperatures are $200\text{ }^{\circ}\text{C}$ and $20\text{ }^{\circ}\text{C}$ respectively. If the convective heat transfer co-efficient between the insulation surface and air is $8\text{ W/m}^2\text{K}$, find the critical radius of insulation for this valve a r , calculate the heal loss per meter of pipe and the outer surface temperature. Neglect resistance of the pipe material. 5M

UNIT – II

3. Derive the expression for heat transfer in the fins in case of rectangular plate fin of uniform cross section insulated end. 14M
(OR)
4. (a) What is the lumped system? What are the assumptions made in lumped system analysis? 6M
(b) An electrical motor of 20 cm outside diameter and 50 cm height is provided with 12 number of longitudinal fins equally spaced in rectangular shape of 3 cm long and 0.3 cm thick. Calculate the amount of heat transfer, fin efficiency and effectiveness of the arrangement. Take $K = 120\text{ W/mK}$, $h = 10\text{ W/m}^2\text{K}$. Assume surface temperature of motor $100\text{ }^{\circ}\text{C}$ and surrounding temperature $30\text{ }^{\circ}\text{C}$. 8M

UNIT – III

5. Define the radiation shield and derive the equation for heat exchange between two plate with radiation shield. 14M
(OR)
6. (a) Explain Stefan Boltzman's law, Kirchoff's law and Lambert cosine law. 9M
(b) Assuming sun to be black body emitting radiation with maximum intensity at $\lambda=0.5\mu\text{m}$ Calculate its surface temperature and emissive power. 5M

UNIT – IV

7. (a) Compare natural and forced convection heat transfer. 5M
(b) Explain the development of hydro-dynamic and thermal boundary layer over a flat plate. 9M
(OR)
8. (a) What is the significance of Reynolds, Prandtl and Nusselt numbers? 9M
(b) Write a note on hydrodynamic and thermal entry length. 5M

UNIT-V

9. Derive an expression for effectiveness of counter flow heat exchanger. 14M
(OR)
10. A copper pan of 35 cm diameter contains water and its bottom surface is maintained at $115\text{ }^{\circ}\text{C}$ by an electric heater. Calculate the power required to boil water in this pan and the rate at which water evaporates from the pan due to the boiling process. Also make calculations for the heat flux for these conditions 14M

Q.P. Code: 656412

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Microprocessors & Interfacing (CSE)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. (a) With diagram explain the Flag registers of 8086. 7M
(b) What are the various data related addressing modes used in 8086 micro processor. 7M
(OR)
2. With neat diagram explain the 40 pins of 8086 microprocessor. 14M

UNIT – II

3. (a) Explain the assembler directives. 7M
(b) Write an ALP to find out a biggest number from an array. 7M
(OR)
4. (a) Write an ALP to find average value from the given array of a data. 7M
(b) Write an ALP to find out the data is a palindrome or not. 7M

UNIT – III

5. (a) With a block diagram explain the roll of DMA controller to transfer a data from I/O devices to memory or vice versa. M
(b) Explain about RS – 232 Serial interface standard. 7M
(OR)
6. Explain Programmable Communication Interface(8251 USART) 14M

UNIT – IV

7. How do you interface a 4 phase stepper motor to 8086 microprocessor? draw the circuit and explain? 14M
(OR)
8. (a) Interface ADC to microprocessor. Draw the diagram clearly showing connections? 7M
(b) Explain the command words of 8255 7M

UNIT-V

9. (a) Compare the register set of 80486 microprocessor with the 80386 microprocessor. 7M
(b) Explain the memory management of 80486. 7M
(OR)
10. Explain in detail the Pentium pro– microprocessor. 14M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Advanced Computer Architecture (CSE)

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

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

UNIT - I

1. Explain about Flynn's classification with neat diagrams? **14M**

(OR)

2. (a) Explain about SIMD supercomputers in detail with help of diagram? **7M**

(b) Distinguish between control flow and data flow in detail. **7M**

UNIT - II

3. (a) Write about arithmetic Mean performance and Harmonic Mean performance with suitable formulas. **7M**

(b) Write a note on Massive parallelism for grand challenges. **7M**

(OR)

4. (a) Explain about hierarchical bus architecture for designing a scalable multiprocessor? **7M**

(b) Explain about cache coherence problem in detail? **7M**

UNIT - III

5. (a) Write about different types of vector instruction. **7M**

(b) Explain about S-Access memory organization with diagram? **7M**

(OR)

6. Explain in detail about Cray Y-MP 816 system organization with neat sketch? **14M**

UNIT - IV

7. (a) Write context-Switching policies. **7M**

(b) Write about Fine-Grain Parallelism. **7M**

(OR)

8. Explain about the Stanford Dash prototype system with suitable diagrams? **14M**

UNIT-V

9. (a) What are the two basic mechanisms are for inter process communication (IPC) and explain? **7M**

(b) What is critical section? What are the operations of critical section and explain. **7M**

(OR)

10. (a) Write about Binary semaphores and Counting semaphores. **7M**

(b) Explain about Domain Decomposition Techniques? **7M**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Compiler Design (CSE)

Time: 3 Hours

Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

UNIT - I

1. (a) Discuss about various phases of a compiler 8M
 (b) Define token, pattern and lexeme. Give examples for each. 6M
 (OR)
2. (a) Briefly explain about regular expressions. 6M
 (b) Find out the patterns for the tokens of the below grammar. 8M
 Stmt \rightarrow if expr then stmt | if expr then stmt else stmt | ϵ
 expr \rightarrow term relop term | term
 term \rightarrow id | number

UNIT - II

3. (a) Construct the sequence of parse trees for the below derivation of $-(id+id)$ using simple arithmetic expression grammar. 7M
 (b) What is Left recursion. Eliminate left recursion for the following grammar. 7M
 $E \rightarrow E + T \mid T$
 $T \rightarrow T * F \mid F$
 $F \rightarrow (E) \mid id$
 (OR)
4. (a) Write the rules to compute FIRST and FOLLOW. 8M
 (b) Discuss about Parse generator yacc. 6M

UNIT - III

5. (a) Write the rules for Type checking. 7M
 (b) Explain about S-Attributed definition and L-Attributed definitions. 7M
 (OR)
6. (a) Construct the annotated parse tree for $2*3+4$ 7M
 (b) Define Synthesized attribute and inherited attribute. Write the syntax-directed definition of a simple desk calculator. 7M

UNIT - IV

7. (a) Discuss about quadruples, triples, and indirect triples. 7M
 (b) Construct a DAG and three-address code for the following instruction 7M
 $x + x*(y-z) + (y-z)*n$
 (OR)
8. Explain about various storage allocation strategies 14M

UNIT-V

9. Write the three-address code and construct the DAG for the below program fragment. 14M
 begin
 PROD := 0;
 I := 1;
 do
 begin
 PROD := PROD + A[I] * B[I];
 I := I + 1;
 end
 while I <= 20
 end

(OR)

10. (a) Discuss about various characteristics of peephole optimization 7M
 (b) Explain about various issues in the design of a code generator 7M

Q.P. Code: 657012

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Software Engineering (CSE)

Time: 3 Hours

Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

UNIT - I

1. (a) Define software engineering and explain in detail about nature of software? 10M
(b) Discuss the software engineering layered technology 4M

(OR)

2. (a) Discuss about classic water fall model and v-model. 10M
(b) Write short notes on spiral model 4M

UNIT – II

3. Discuss how an ATM is used, develop a set of use case that could serve as a basis for understanding the requirement for an ATM system. 14M

(OR)

4. Explain briefly about the data modeling concepts and class based modeling 14M

UNIT – III

5. Explain the following: 14M
(i) software architecture
(ii) architecture genres
(iii) architecture styles

(OR)

6. Explain in design principles for class-based components, 14M

UNIT – IV

7. (a) Briefly discuss the golden rules for user interface . 8M
(b) write and explain interface design steps 6M

(OR)

8. (a) Compare white -box testing and black-box testing. 10M
(b) Explain short notes on integration testing 4M

UNIT-V

9. Write briefly about COCOMO model. 14M

(OR)

10. (a) Explain briefly about risk management 6M
(b) Write the characteristics of software maintenance 8M

Q.P. Code: 657212

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Computer Networks (CSE)

Time: 3 Hours

Max. Marks: 70

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

UNIT – I

1. Write a detailed note on TCP/IP reference Model. Also compare TCP/IP and OSI reference model. **14M**

(OR)

2. (a) Explain about the ARPANET. **6M**
(b) What are the advantages and disadvantages of Wireless LAN? **8M**

UNIT – II

3. (a) Explain the following error detection techniques i) Checksum ii) Hamming Code **8M**
(b) Explain about one bit sliding window protocol **6M**

(OR)

4. (a) Discuss Framing Techniques in brief. **7M**
(b) List and explain different multiple access protocols in brief. **7M**

UNIT – III

5. (a) Explain in detail about the Distance vector Routing Algorithm. **10M**
(b) What are the main functions of network layer? **4M**

(OR)

6. (a) What is a Routing protocol? List and explain the principles of routing. **10M**
(b) Describe the major differences between the ECN method and the RED method of congestive avoidance. **4M**

UNIT – IV

7. (a) Describe the services offered by transport layer. **7M**
(b) What is flow control? Explain its role in transport layer. **7M**

(OR)

8. (a) Briefly explain the elements of transport layer. **7M**
(b) Explain about TCP header format. **7M**

UNIT-V

9. (a) Draw and explain the figure that shows the purpose of DNS **7M**
(b) Explain the JPEG compression Technique with neat diagrams. **7M**

(OR)

10. (a) Explain the naming hierarchy in DNS with an example. **7M**
(b) Write about WWW and multimedia. **7M**

Q.P. Code: 657412

SET - 1

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. V Sem. (R15) Supple. Examinations of February/March - 2021
SUB: Web Technologies (CSE)

Time: 3 Hours

Max. Marks: 70

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

UNIT - I

1. Define Webserver ? Describe any five types of web servers with clear Explanation? 14M
(OR)
2. (a) Explain Different HTTP Request Methods? 7M
(b) Explain Different HTTP Response Methods? 7M

UNIT – II

3. (a) Explain in detail about Forms? 7M
(b) Create a simple HTML page which demonstrates the use of the various types of Forms? 7M
(OR)
4. Explain How to implement lists, tables and Arrays in Java Script with Example? 14M

UNIT – III

5. Define an Expression and Describe the Operand and Operators of an Expression used in PHP in Detail? 14M
(OR)
6. Describe the following in PHP 14M
i) Encapsulation ii) inheritance iii) Polymorphism

UNIT – IV

7. With an Example implement how cookies can be created, used and deleted in PHP? 14M
(OR)
8. (a) Explain how to End a Session in PHP with Example? 5M
(b) Describe the Mechanism of Destroying a Session in PHP? 8M

UNIT-V

9. (a) Differentiate Superglobals vs. Globals? 7M
(b) Explain Working with Multipage Forms? 7M
(OR)
10. (a) Write PHP Code to Create a Database? 8M
(b) Explain how to Query a Database? 6M