Q.P. Code: 252412 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Supple. Examinations of September 2020
SUB: BRIDGE ENGINEERING (CE)

Time : 3 Hours | Max. Marks: 70

Answer any FIVE Questions choosing one question from each unit.

All questions carry Equal Marks.

Note: IRC, IS 456-2000 & IS 800 – 2007 Codes are permitted in the Examination Hall

UNIT - I

1. (a) Discuss in detail about the various loads that should be considered for the design of bridges. 7M
   (b) Write about the Highway Bridge Loading Standards. 7M

(OR)

2. (a) Write about the various railway bridge loading standards (B.G and M.G Bridges) 7M
   (b) List out the various loads that will act in bridges. 7M

UNIT – II

3. Design a Box Culvert having inside dimensions of 3 x 3 m. The culvert is subjected to a dead load of 10 kN/m^2 and a live load of IRC Class "AA" tracked vehicles. Assume unit weight of soil to be 18 kN/m^2. The angle of repose of soil is 25°. Use M40 grade concrete and Fe500 grade steel. Consider the thickness of slab and walls as 200 mm. 14M

(OR)

4. Design a Box Culvert having inside dimensions of 3.5 x 4 m. The culvert is subjected to a dead load of 12 kN/m^2 and a live load of IRC Class "AA" tracked vehicles. Assume unit weight of soil to be 18 kN/m^2. The angle of repose of soil is 30°. Use M30 grade concrete and Fe415 grade steel. Consider the thickness of slab and walls as 200 mm. The road width is 7.5m and the span is 4 m. Adopt MD method for calculating the final moments of the box culvert. 14M

UNIT – III

5. Explain about the effective width method for the design (only) of deck Slab Bridge of simply supported subjected to class AA tracked vehicles. 14M

(OR)

6. Design a reinforced concrete slab culvert for a National Highway to suit the following data: 14M
   Carriage way - 7.5 m; Foot paths on either side - 0.75 m
   Clear span of the bridge = 6 m; Wearing coat thickness = 80 mm
   Width of bearing is 400mm; Live load : IRC class AA tracked vehicle
   Materials used: M35 grade of concrete, Fe415 HYSD bars
   Permissible stresses: σ_{cbc} is 8.5 MPa, σ_{st} = 200 N/mm^2
   Design RC Deck slab and sketch the details of reinforcement in longitudinal and cross-section of the slab.

UNIT – IV

7. Design a RCC T-beam bridge to suit the following data: 14M

Clear width of roadway : 7.5 m
Span (c/c of bearings) : 20 m
Live load : I.R.C. Class AA tracked vehicle
Average thickness of wearing coat = 100 mm
Concrete mix : M30 grade
Steel : Fe415 grade HYSD bars

Using Courbon's method. Design the deck slab, main girder and cross girders. Assume suitable data if any required.

(OR)

8. Design the interior panels of slabs of a RCC T-beam bridge to suit the following data: 14M

Clear width of roadway : 7.5 m
Span (c/c of bearings) : 12 m
Live load : I.R.C. Class AA tracked vehicle
Average thickness of wearing coat = 80 mm
Concrete mix : M25 grade
Steel : Fe415 grade HYSD bars

UNIT-V

9. (a) Write about the various forces acting on the piers. 7M

(b) Discuss about the various types of Wing Walls. 7M

(OR)

10. (a) Explain the design procedure for mild steel rocker bearing? 8M

(b) Write about the advantages and disadvantages of Steel Rocker Bearings and Elastomeric Pad Bearings 6M

Q.P. Code: 252812 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: FINITE ELEMENT METHOD (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) Define Finite Element Method, explain basic steps involved in FEM. 10M
   (b) Write the advantages and disadvantages of Finite Element Method. 4M

(OR)

2. (a) Explain the importance of Node numbering scheme. 7M
   (b) What are simple, complex and multiplex elements? 7M

UNIT – II

3. (a) Derive the shape function for quadratic 1D bar element. 8M
   (b) Use two-point Gaussian quadrature formula to evaluate the integral 6M
   $I = \int_0^3 (2^{\xi} - \xi)\, d\xi$.

(OR)

4. (a) Explain iso-parametric, sub-parametric and super parametric elements. 5M
   (b) Find the nodal displacement stress and reaction for the bar subjected to load as shown in **Fig. 1.** Take E_1 = 70 GPa and E_2 = 200 GPa. (Horizontal load = 300 kN; UDL is 800 kN/m. 9M

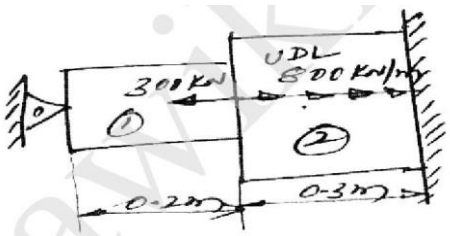

Fig. 1

UNIT – III

5. The plane truss shown in the **Fig. 2** has two elements and three nodes. What are nodal displacements and the element forces? Assume E = 10^5 MPa, A = 10^{-4} m^2, L = 1 m, F = 14,142 N. 14M

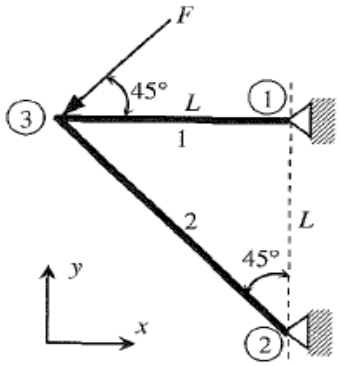

Fig. 2

(OR)

6. The plane truss shown in **Fig. 3** is composed of members having a square 15 mm × 15 mm cross section and modulus of elasticity E = 69 GPa. Determine the nodal displacements and the stresses in each element. 14M

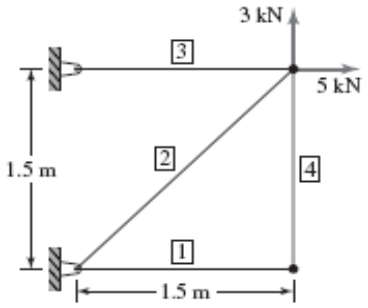

Fig. 3

UNIT – IV

7. A beam with fixed end and roller support is subjected to a point force of 20 kN as shown in **Fig. 4.** Determine (i) Transverse forces and bending moments, and (ii) Deflections and slopes at points A, B and C. Take E = 200 GPa and I = 8 x 10^{-5} m^4. 14M

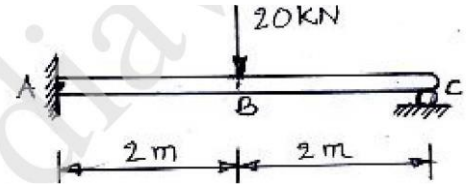

Fig. 4

(OR)

8. (a) Explain about the strain energy concept of a beam. 7M

(b) A one-dimensional tapered fin element has the nodal coordinates x_i = 20 mm and x_j = 60 mm with the area of cross section changing linearly from a value of A_i = 20 mm^2 at x_i to a value of A_j = 10 mm^2 at x_j as shown in **Fig. 5**. Determine the shape functions. 7M

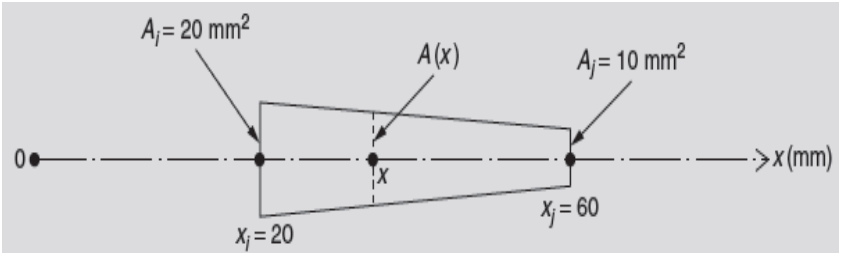

Fig. 5.

UNIT-V

9. For a four noded rectangular element the coordinates are (0, 0), (4, 0), (4, 2) and (0,2). All dimensions are in cm. Determine the following 14M
(i) Jacobian Matrix
(ii) Strain – Displacement matrix
(iii) Element Strains and
(iv) Element stresses.
Take E = 2 x 10^5 MPa, $\mu = 0.25$; $\xi = 0$; $\eta = 0$
$\{\delta\} = [0, 0, 0.003, 0.004, 0.006, 0.0035, 0, 0]^T$. Assume plane stress condition.

(OR)

10. (a) Discuss briefly Numerical Integration Solution Technique 7M

(b) Discuss about assembly of elements for static loads. 7M

Q.P. Code: 253012 | **SET - 1**

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

B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020

SUB: QUANTITY SURVEYING AND VALUATION (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 standard specifications for (i) Mortars and (ii) Reinforced concrete.	7M
	(b)	What are the general specifications of a First Class Building?	7M
		(OR)	
2.	(a)	Explain the method of estimating for any two main items of work.	7M
	(b)	Briefly explain the types of estimates.	7M

UNIT – II

3.	(a)	Prepare the rate chart for Cement concrete in 1 : 5 : 10 in foundation - 10 cu. m.	7M
	(b)	Prepare the rate chart for Earthwork in Banking in Road work in layer of 20 cm - 100 cu. m.	7M
		(OR)	
4.	(a)	Prepare the rate chart for R.C.C. work excluding steel - 10 cu. m.	7M
	(b)	Prepare the rate chart for I-class Brickwork in Superstructure with 1 : 3 Lime Surkhi Mortar - 10 cu. m.	7M

UNIT – III

5.		Estimate the quantities of following item of works from the Single-roomed Building shown in Fig. 1. a) Earthwork in Excavation in foundation, b) Lime concrete in foundation, c) 1^{st} class brickwork in superstructure in lime mortar.	14M
		(OR)	
6.		Estimate the quantities of following item of works from the Two-roomed Building shown in Fig. 2. i) Earthwork in Excavation in foundation, ii) Lime concrete in foundation, iii) 1^{st} class brickwork in Foundation and Plinth in 1 : 6 cement mortar.	14M

UNIT – IV

7.		Prepare a detailed estimate of R.C.C. Roof Slab given in Fig. 3.	14M
		(OR)	
8.		Prepare a detailed estimate of R.C.C. Beam given in Fig. 4.	14M

UNIT-V

9.	(a)	What are the types of contract ? Briefly explain them	7M
	(b)	List the contract documents and explain them.	7M
		(OR)	
10.	(a)	Explain the different methods of valuation of building.	7M
	(b)	List the various items of works for valuation of building.	7M

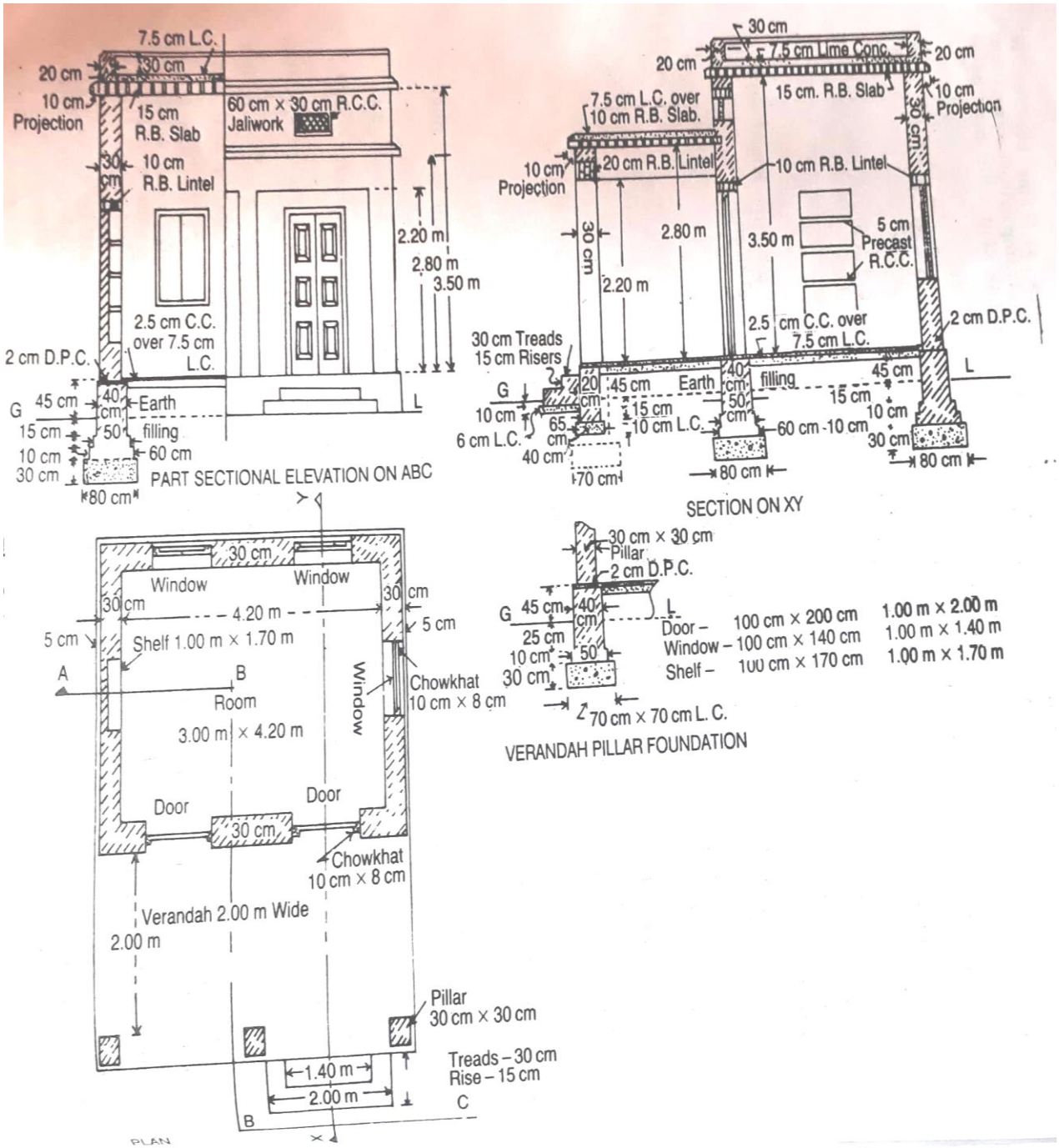
7.5 cm L.C.
20 cm
30 cm
10 cm Projection
15 cm R.B. Slab
60 cm × 30 cm R.C.C. Jaliwork
30 cm
10 cm R.B. Lintel
2.20 m
2.80 m
3.50 m
2.5 cm C.C. over 7.5 cm L.C.
2 cm D.P.C.
G
45 cm
40 cm
Earth
15 cm
50 cm
filling
10 cm
60 cm
30 cm
80 cm
PART SECTIONAL ELEVATION ON ABC
30 cm
7.5 cm Lime Conc.
20 cm
15 cm. R.B. Slab
10 cm Projection
7.5 cm L.C. over 10 cm R.B. Slab.
20 cm R.B. Lintel
10 cm R.B. Lintel
5 cm Precast R.C.C.
2.5 cm C.C. over 7.5 cm L.C.
30 cm Treads
15 cm Risers
20 cm
45 cm
Earth
filling
15 cm
10 cm L.C.
6 cm L.C.
65 cm
40 cm
70 cm
60 cm
10 cm
80 cm
SECTION ON XY
Window
Window
4.20 m
5 cm
Shelf 1.00 m × 1.70 m
A
B
Room
3.00 m × 4.20 m
Window
Chowkhat 10 cm × 8 cm
Door
Door
Chowkhat 10 cm × 8 cm
Verandah 2.00 m Wide
2.00 m
Pillar 30 cm × 30 cm
Treads – 30 cm
Rise – 15 cm
1.40 m
2.00 m
C
PLAN
30 cm × 30 cm Pillar
2 cm D.P.C.
25 cm
50 cm
70 cm × 70 cm L. C.
VERANDAH PILLAR FOUNDATION
Door – 100 cm × 200 cm 1.00 m × 2.00 m
Window – 100 cm × 140 cm 1.00 m × 1.40 m
Shelf – 100 cm × 170 cm 1.00 m × 1.70 m

Fig. 1.

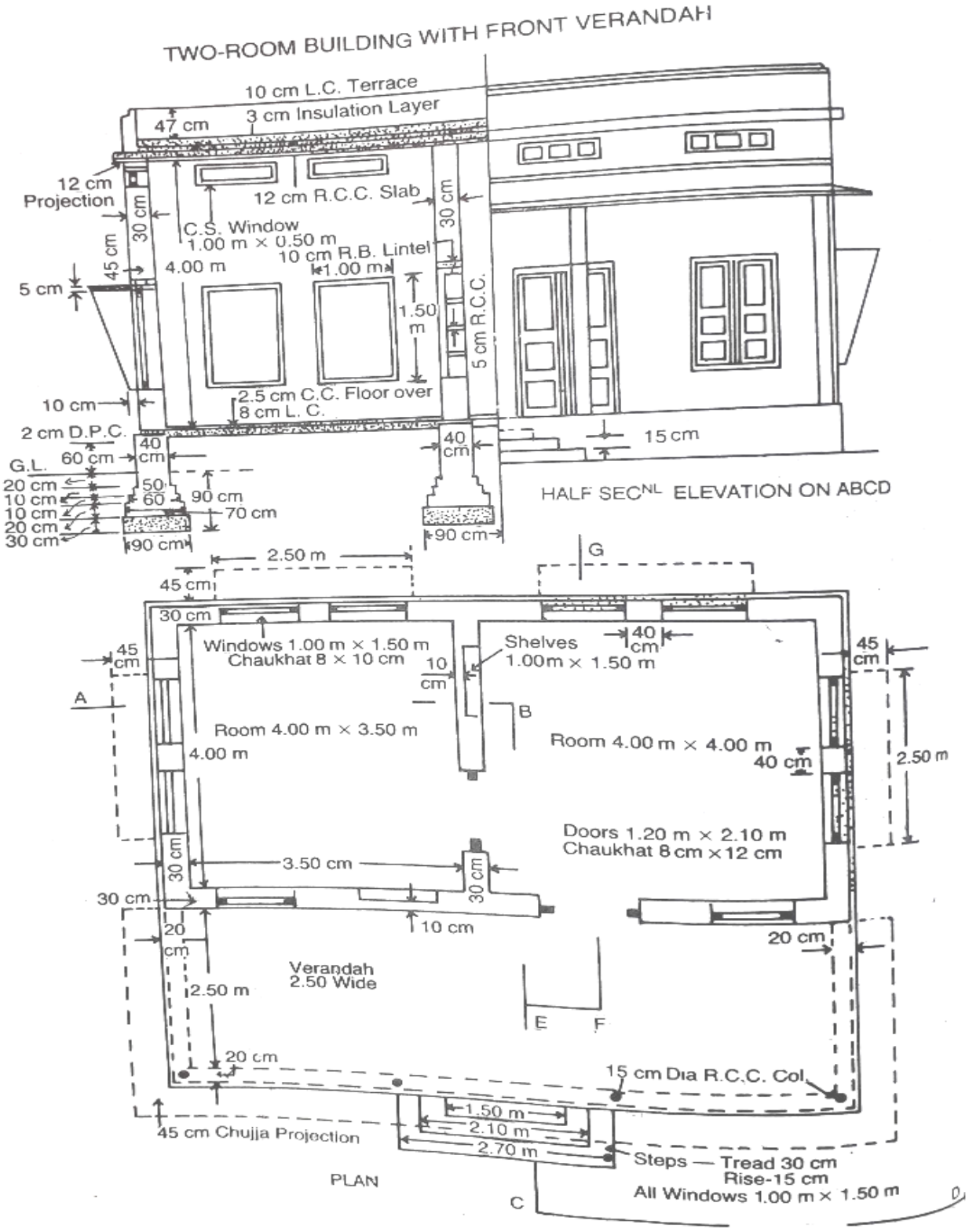
TWO-ROOM BUILDING WITH FRONT VERANDAH
10 cm L.C. Terrace
3 cm Insulation Layer
47 cm
12 cm Projection
12 cm R.C.C. Slab
30 cm
C.S. Window
1.00 m × 0.50 m
10 cm R.B. Lintel
1.00 m
4.00 m
45 cm
5 cm
1.50 m
5 cm R.C.C.
2.5 cm C.C. Floor over
8 cm L. C.
10 cm
2 cm D.P.C.
G.L.
60 cm
40 cm
50
60
90 cm
70 cm
20 cm
10 cm
10 cm
20 cm
30 cm
90 cm
15 cm
HALF SECNL ELEVATION ON ABCD
2.50 m
G
45 cm
30 cm
Windows 1.00 m × 1.50 m
Chaukhat 8 × 10 cm
Shelves
1.00m × 1.50 m
10 cm
A
B
Room 4.00 m × 3.50 m
Room 4.00 m × 4.00 m
Doors 1.20 m × 2.10 m
Chaukhat 8 cm × 12 cm
3.50 cm
Verandah
2.50 Wide
E
F
20 cm
15 cm Dia R.C.C. Col.
45 cm Chujja Projection
1.50 m
2.10 m
2.70 m
Steps — Tread 30 cm
Rise-15 cm
All Windows 1.00 m × 1.50 m
PLAN
C
D

Fig. 2.

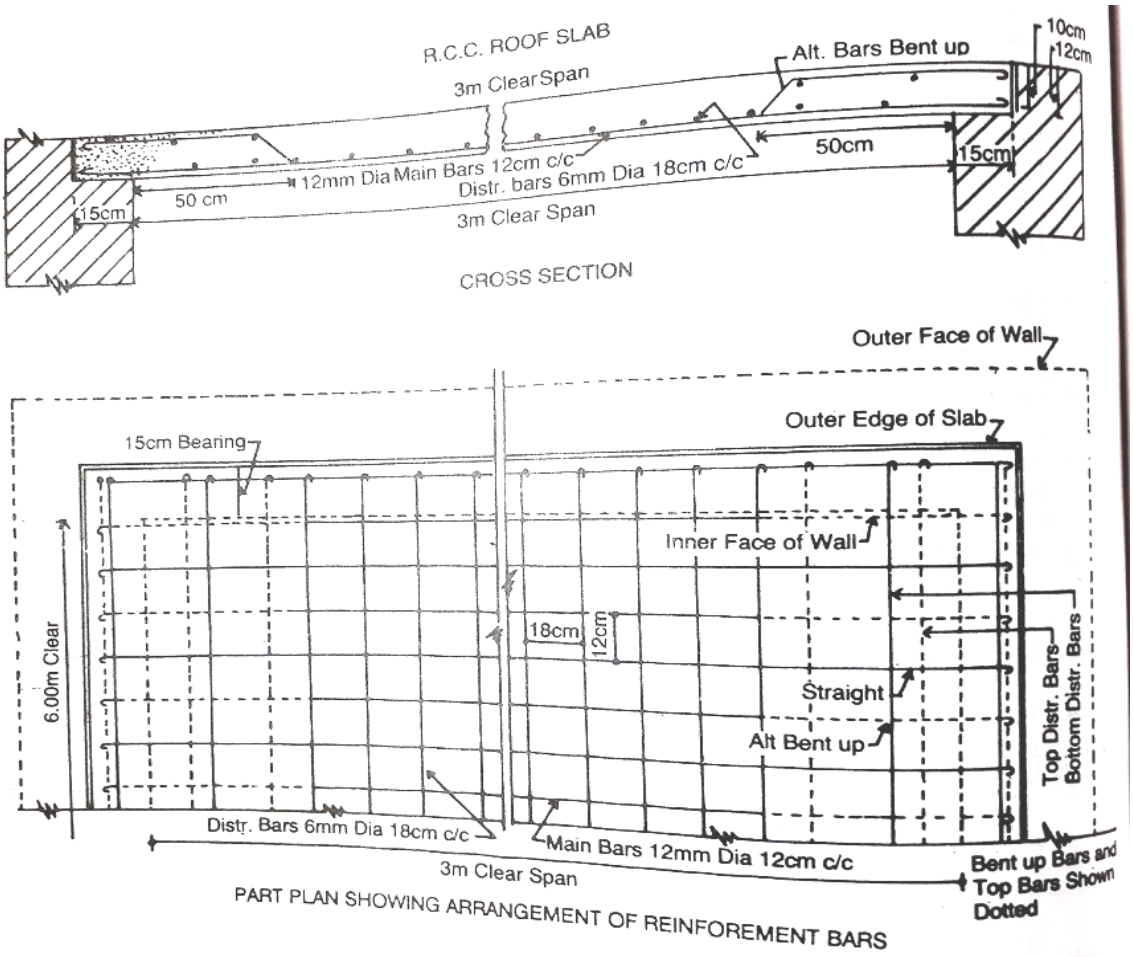
R.C.C. ROOF SLAB
3m Clear Span
Alt. Bars Bent up
10cm
12cm
50cm
15cm
12mm Dia Main Bars 12cm c/c
Distr. bars 6mm Dia 18cm c/c
3m Clear Span
50 cm
15cm
CROSS SECTION
Outer Face of Wall
Outer Edge of Slab
15cm Bearing
Inner Face of Wall
18cm
12cm
6.00m Clear
Straight
Alt Bent up
Top Distr. Bars
Bottom Distr. Bars
Distr. Bars 6mm Dia 18cm c/c
Main Bars 12mm Dia 12cm c/c
3m Clear Span
Bent up Bars and Top Bars Shown Dotted
PART PLAN SHOWING ARRANGEMENT OF REINFOREMENT BARS

Fig. 3.

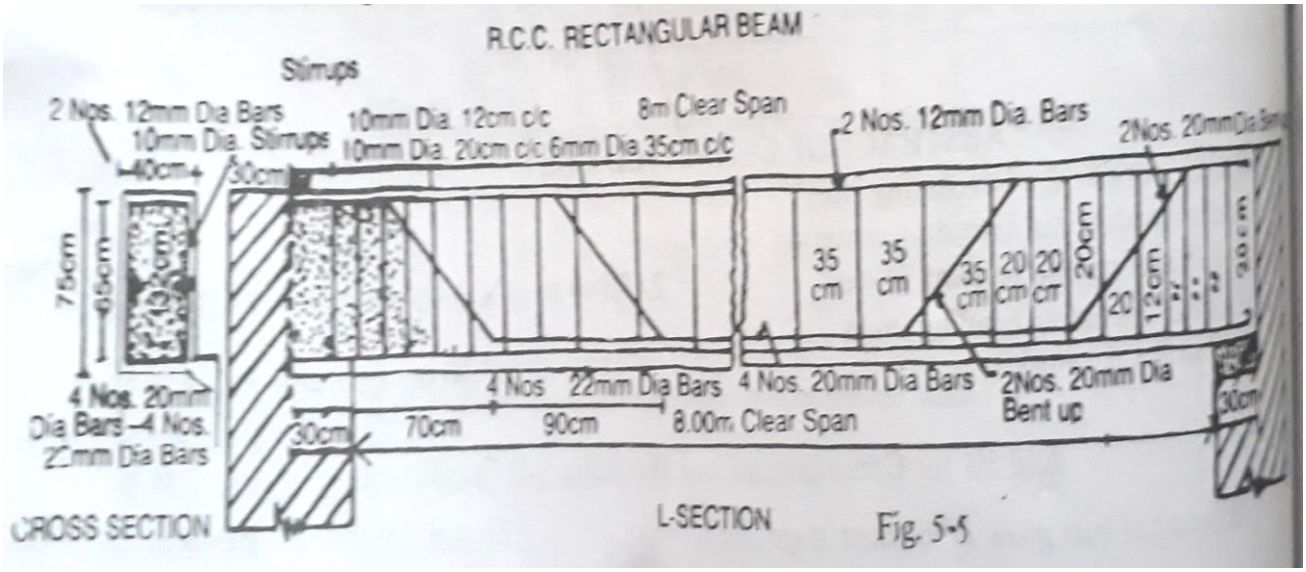
R.C.C. RECTANGULAR BEAM
Stirups
2 Nos. 12mm Dia Bars
10mm Dia. Stirups
40cm
30cm
10mm Dia. 12cm c/c
10mm Dia. 20cm c/c 6mm Dia 35cm c/c
8m Clear Span
2 Nos. 12mm Dia. Bars
2Nos. 20mm Dia Bent up
75cm
65cm
35 cm
35 cm
35 cm
20 cm
20 cm
20cm
20
12cm
4 Nos. 20mm Dia Bars
4 Nos. 22mm Dia Bars
4 Nos. 20mm Dia Bars
2Nos. 20mm Dia Bent up
30cm
70cm
90cm
8.00m Clear Span
CROSS SECTION
L-SECTION
Fig. 5-5

Fig. 4.

Q.P. Code: 253212 | **SET - 1**

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

B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020

SUB: DESIGN & DRAWING OF IRRIGATION STRUCTURES (CE)

Time : 3 Hours Max. Marks: 70

Note: Answer any ONE question. Assume any missing data

1. Design the surplus work of a tank forming part of a chain of tanks. The combined catchment area of the group of tank is 25.89 Km^2 and the area of the catchment intercepted by the upper tanks is 20.71 Km^2.

It is decided to store water in the tank to a level of + 12.00 meters above mean sea level limiting the submersion of foreshore lands up to a level of +12.75 m above M.S.L. The general ground level at the proposed site of work is + 11.00 m, and the ground level below the proposed surplus slopes off till it reaches + 10.00 meters in about 6 m distance.

The tank bund has a top width of 2 meters at level + 14.50 with 2.1 side slopes on either side. The tank bunds are designed for a saturation gradient of 4:1 with 1 m clear cover.

Provision may be made to make Kutcha regulating arrangements to store water up to M.W.L. at times of necessity.

The foundations are of hard gravel at a level of + 9.5 m near the site of work.

Draw the following: (i) Plan of surplus weir (ii) cross section

(OR)

2 Design a regulator-cum- road bridge with the following data

Hydraulic Particulars	Upstream Side	Downstream side
Full Supply discharge	20 cumecs	16 cumecs
Bed width	15 meters	15meters
Bed level	+20.00	+20.00
Full supply depth (F.S.D)	2.0meters	1.75meters
Full Supply Level (F.S.L)	+22.00	+21.750
Top of bank level (T.B.L)	+23.00	+22.750

The Ground level at the site of work is + 22.00
Good soil is available for foundation at + 19.00
At Upstream, the right bank is 5 meters wide and left bank is 2m wide.
At downstream, top width of bank are the same as those on the upstream
The regulator carries a road way single lane designed for I.R..C loading class A. Provide clear free board of one meter above F.S.L for the road bridge.

Draw to a suitable scale the following

(a) Longitudinal section and

(b) Half plan at top and half plan at foundation level

Q.P. Code: 253412 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: SANITARY 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)	Define the following terms: i) Sullage ii) Storm water iii) Sewage	6M
	(b)	Explain the general methods available for estimation sewage in urban areas	8M
		(OR)	
2.	(a)	Determine the size of a circular sewer for a discharge of 600 lps running half-full. Assume hydraulic gradient of 1 in 1200 and Manning's constant n=0.013.	7M
	(b)	What are the various types of sewer appurtenances? Explain any one in detail.	7M

UNIT – II

3.	(a)	Derive the 1st stage BOD equation.	7M
	(b)	What is decomposition? Explain the Carbon, Nitrogen and Sulphur Cycles of decomposition	7M
		(OR)	
4.	(a)	Write a short note on i) screening and ii) Grit chamber	8M
	(b)	Design a primary sedimentation tank to treat 10 MLD of sewage. Assume suitable data if required.	6M

UNIT – III

5.	(a)	Write a note suspended and attached growth of biological systems.	6M
	(b)	Design a conventional activated sludge treatment plant based on the following data. i) Sewage flow = 1 MLD ii) MLSS = 2000 mg/lit ii) Inlet BOD = 180 mg/lit iv) F/M ratio = 0.2	8M
		(OR	
6.	(a)	The colony of the industrial estate has population of 30,000 persons. The sewage flow is 125lpcd. The 5 day BOD of sewage is 300 mg/l. Design the oxidation pond for treatment of sewage. Assume any suitable data if required.	7M
	(b)	Write a brief note on operational problems of biological treatment process units	7M

UNIT – IV

7.	(a)	Discuss in brief biological nitrification – denitrification method for removal of nitrogen from sewage.	8M
	(b)	Explain the standards for disposal of treated sewage on land for irrigation purpose.	6M
		(OR)	
8.	(a)	Explain briefly sludge utilization and sludge disposal.	8M
	(b)	Design a septic tank for a colony 150 users, assuming the rate of water supply as 120 lpd.	6M

UNIT-V

9.	(a)	Explain the various source and its types of solid waste generation.	7M
	(b)	Write a note on sanitary landfills.	7M
		(OR)	
10.	(a)	What are various sources of air pollutions? Explain the effects of air pollutions on human beings.	7M
	(b)	Explain the permissible limits of noise pollution.	7M

Q.P. Code: 352412 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: RELIABILITY ENGINEERING & APPLICATION TO POWER 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 basic principles of Bernoulli's trials.	6M
	(b)	Explain the basic probability theory.	8M
		(OR)	
2.	(a)	Discuss the probability density and distribution function.	7M
	(b)	State the expected value and standard deviation of binomial distribution with an example.	7M

UNIT – II

3.	(a)	Draw and describe Bath Tub curve for mechanical components.	7M
	(b)	Draw and explain the network reliability evaluation with failures of exponentially distributed components for series-parallel system.	7M
		(OR)	
4.	(a)	Explain the reliability measures MTTF, MTTR and MTBF.	7M
	(b)	Develop the expression for MTTF of a series system whose components are having exponentially distributed probability functions.	7M

UNIT – III

5.	(a)	Discuss Markov modeling.	7M
	(b)	Derive the evaluation of two component repairable models.	7M
		(OR)	
6.	(a)	Determine the STPM and limiting state probabilities associated with each state and number of time intervals spent in each state if state3 is defined as absorbing state for the following transition probabilities from state 1 to state2 is 1/4, from state2 to state3 is 1/2, from state3 to sate1 is 1/3, and state 3 to state 2 is 1/3. (Draw the state space diagram also)	7M
	(b)	Explain how time dependent probability evaluation is done with the help of Laplace transform approach giving an example.	7M

UNIT – IV

7.	(a)	Explain the generation system reliability analysis.	7M
	(b)	Describe the cumulative frequency of failure evaluation.	7M
		(OR)	
8.	(a)	Explain about LOLP and LOLE.	7M
	(b)	Explain the Reliability Model of a generation system.	7M

UNIT-V

9.		List out annualized load point indices. Explain the calculation using probability of failure and frequency.	14M
		(OR)	
10.	(a)	Describe the composite system reliability analysis.	7M
	(b)	What is the need of consideration of weather effects in reliability evaluation?	7M

Q.P. Code: 353012 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: ELECTRICAL MACHINE DESIGN (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 the output equation of 3-phase core type transformer. What are usual values for specific loadings? 6M

   (b) Calculate the approximate overall dimensions for a 200KVA, 6600/440V,50Hz, three phase core type transformer for the following data: emf/turn=10V, Maximum flux density=1.3T, current density=2.5 A/mm^2, window space factor=0.3, overall height=overall width: Iron stacking factor = 0.9. Use two stepped core. 8M

(OR)

2. (a) Obtain an expression for the no load current of a single phase transformer 6M

   (b) A 100KVA, 2000/400V, 50Hz, single phase, shell type transformer has the following particulars: Maximum flux density = 1.1 Wb/m^2, current density = 2.2 A/mm^2, window area constant = 0.33, volt/turn=11, core is rectangular and stampings are 7cm wide. Length of window is equal to twice the width of window. Obtain (i) Net iron and window area (ii) Dimensions and weight of core. Specific gravity of iron=7.8gram/cm^3, 8M

UNIT – II

3. (a) Explain any four factors that influence the choice of number of poles in case of a d.c.mchine. 6M

   (b) A design is required for a50Kw, 4-pole, 600 rpm and 220V dc shunt generator. The average flux density in the air gap and specific electric loading are respectively 0.57T and 30000 ampere-conductors per meter. Calculate suitable dimensions of armature core to lead to a square pole face. Assume that full load current. Ratio pole arc to pole pitch is 0.67. 8M

(OR)

4. (a) Distinguish between lap winding and wave winding. 6M

   (b) Each pole of DC shunt motor is required to produce 18000 Ampere-turns. The air gap Flux per pole is 0.2Wb and the flux density in the circular pole core is 1.5 Wb/m^2. The leakage coefficient for the pole is 1.2. The field coils has radial depth of 5cm and dissipate 0.07 watts/cm^2 of the outside cylindrical surface without overheating. The conductor is insulted with 0.1mm thick insulation. The voltage across each field coil is 60V. Estimate i) diameter of the filed conductor and its space factor ii) height of the field coil. 8M

UNIT – III

5. (a) Define specific magnetic loading and specific electric loading for a three phase AC machines. Mention the usual values of specific lodgings. 6M

   (b) Determine the main dimensions, turns/phase, number of slots of 250HP, three phase, 50Hz, 400V, 1400 rpm, slip ring induction motor. Assume B_{av} =0.5 Wb/m^2 .q=30000ac/m, efficiency=90% and power factor 0.9, winding factor = 0.95, current density 3.5 A/mm^2, slot space factor=0.4 and the ratio of core length to pole pitch is 1.2. The machine is delta connected. 8M

(OR)

6. (a) Discuss the various factors which influence the selections of air gap and stator slots in an induction motor. 6M

   (b) Give the procedure of estimating end ring current in a three phase squirrel cage rotor, with neat sketch. 8M

UNIT – IV

7. (a) From the first principles derive the output equation of single phase alternator in terms of specific loadings, diameter and length of stator core. 6M

   (b) Design the suitable values of diameter and length of a 75MVA, 11KV, 50HZ, 300RPM, three phase star connected alternator. Also determine the value of flux, conductor per slot, number of turns per phase and size of armature conductor. Given average gap density 0.6T, ampere conductors per meter=50000, peripherals speed = 180, winding factor=0.955, current density= 6 A/mm^2. 8M

(OR)

8. (a) What are steps involved, in design of field windings of a synchronous machine. 6M

   (b) Determine with a suitable number of slots and conductor per slots for the stator winding of a three phase 3300V. The maximum flux density in the air gap should be approximately 0.9 Wb/m^2.Assume sinusoidal flux distribution. Use single layer winding and a star connection for stator. 8M

UNIT-V

9. Define the cooling time constant. Derive the expression for temperature fall of an electric machine in terms of cooling time constant and final temperature fall. 14M

(OR)

10. (a) Derive an expression for the number of cooling tubes required to limit the temperature rise in a three phase transformer. 6M

    (b) The tank of 500KVA, 50Hz, single phase, core type transformer is 1.05x0.62x1.6M high. The mean temperature rise is limited to 40^0c. The loss dissipating surface of tank is 5.34 m^2.The loss is 5325W. Find the area of tubes and number of tubes needed. 8M

Q.P. Code: 353212 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
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.

UNIT - I

1.	(a)	Why are need transmission interconnection?	7M
	(b)	Discuss about benefits from FACTS Controllers	7M
		(OR)	
2.	(a)	What are various categories of FACTS controllers?	7M
	(b)	Explain how power flow in an AC meshed system can be controlled with the help of FACTS devices	7M

UNIT – II

3.	(a)	Differentiate between voltage sourced and current sourced converters. Also mention the applications of voltage sourced converters.	9M
	(b)	Comment on the Harmonic presence in 12, 24 and 48 pulse operation.	5M
		(OR)	
4.	(a)	Discuss how end of line voltage support improves voltage stability in radial lines.	7M
	(b)	Explain the three phase full-wave bridge converter with necessary waveforms.	7M

UNIT – III

5.	(a)	Explain about switching converter type VAR generators.	7M
	(b)	What are the objectives of reactive shunt compensation?	7M
		(OR)	
6.	(a)	Explain how midpoint voltage regulation for a transmission line increases the transient stability margin.	7M
	(b)	Discuss the method of improving transient stability studies.	7M

UNIT – IV

7.	(a)	Describe the modes of operation of STATCOM	7M
	(b)	Give a comparison between SVC and STATCOM	7M
		(OR)	
8.	(a)	Draw and explain the power angle curve of SVC compensated SMIB system?	7M
	(b)	List the applications and salient features of STATCOM.	7M

UNIT-V

9.	(a)	Discuss the working of Thyristor Switched Series Capacitor (TSSC).	4M
	(b)	Explain the control schemes of TCSC and GCSC	10M
		(OR)	
10.	(a)	Discuss the working of a GTO thyristor controlled Series Capacitor (GSC).	7M
	(b)	Discuss how series capacitive compensation improves the transient stability of a line.	7M

Q.P. Code: 353412 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
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.

UNIT - I

1. (a) Define and explain the Laws of illumination. 7M
   (b) With the help of a circuit diagram, explain the working of the sodium vapour lamp. Give applications of sodium vapour lamp. 7M

(OR)

2. Briefly explain the following: 14M
   i) Types of lighting schemes, ii) Factory lighting.
   iii) Street lighting, iv) Flood lighting

UNIT – II

3. (a) Discuss the relative merits and demerits of direct and indirect electric ARC furnaces. 7M
   (b) What are the factors which decide the frequency and voltage of the dielectric heating? Derive an expression for heat produced in a dielectric material. 7M

(OR)

4. (a) Describe with neat sketches the various methods of electric resistance welding. Give its merits and demerits. 7M
   (b) With necessary figures, explain the process of carbon **arc** welding and metallic **arc** welding. 7M

UNIT – III

5. Write the following:
   a) Factors affecting selection of motors 4M
   b) Types of loads and their characteristics 5M
   c) Steady state characteristics of d.c motor drives. 5M

(OR)

6. (a) Explain various methods of speed control of AC motors. 7M
   (b) Derive an expression for the temperature rise of an electrical machine. State the assumptions made. 7M

UNIT – IV

7. (a) Compare the pure AC and DC traction systems with different aspects. 7M
   (b) Explain the modern trends in electric traction with respect to 3-phase A.C motors. 7M

(OR)

8. (a) Explain various methods of electric braking. State the conditions to be fulfilled for each method of braking. 7M
   (b) Discuss the effect of small change in supply voltage over the performance of a d.c series motor when regenerative braking is being used. 7M

UNIT-V

9. (a) Derive an expression for maximum speed (Vm) of speed-time curve of electric traction assuming trapezoidal speed time curve. 7M
   (b) A train runs between two stations **1.6** km apart at an average speed of **36** km/h. if the maximum speed is limited to be **72** km/h, acceleration to **2.7** km/h/s, coasting retardation to **0.18** km/h/s, and braking retardation to **3.2** km/h/s, compute the duration of acceleration, coasting and braking periods assuming quadrilateral speed-time curve. 7M

(OR)

10. (a) What are the requirements of ideal traction systems. How are they met in an electric traction system? 7M
    (b) Describe the procedure of calculating the specific energy consumption of an electric train. What are the factors affecting the specific energy, explain briefly. 7M

Q.P. Code: 452012 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: BIOMEDICAL INSTRUMENTATION (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)	What is Bio-amplifier? Explain its role in medical instrumentation system.	6M
	(b)	Comment on any two Bio-signals and their significance.	8M
		(OR)	
2.		Discuss in detail about the problems encountered with measurements from human beings and suggest some remedies to them.	14M

UNIT – II

3.		Derive Nernst equation for membrane Resting Potential Generation.	14M
		(OR)	
4.	(a)	Describe the generation and features of action potential.	6M
	(b)	Elucidate the conduction through nerve to neuromuscular junction.	8M

UNIT – III

5.	(a)	Compare internal and external bio potential electrodes.	6M
	(b)	What is the relation between electrical and mechanical activities of the heart? Explain.	8M
		(OR)	
6.	(a)	Classify the pacemakers used in cardiac systems. Explain them in detail.	6M
	(b)	Draw the block diagram of synchronized D.C. defibrillator and explain its working.	8M

UNIT – IV

7.	(a)	Define Einthoven Triangle. Describe how ECG lead configurations are employed.	8M
	(b)	What is Diathermy? Illustrate the working principle of Short Wave Diathermy.	6M
		(OR)	
8.	(a)	How respiratory function is monitored using Pneumotachograph technique? Discuss.	7M
	(b)	Discuss the different type of Ventilators used in respiratory mechanism.	7M

UNIT-V

9.	(a)	Demonstrate the patient isolation in safety mechanisms.	7M
	(b)	Write in detail about grounding conditions in hospital environment.	7M
		(OR)	
10.		Summarize the electrical hazards protection mechanisms provided in the biomedical instrumentation systems.	14M

Q.P. Code: 453012 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: RADAR SYSTEMS (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)	What are the different range frequencies that radar can operate and give their applications?	7M
	(b)	Derive fundamental radar range equation governed by minimum receivable echo power s_{min}.	7M
		(OR)	
2.	(a)	Describe the effect of pulse repetition frequency on the estimated unambiguous range of radar.	7M
	(b)	Draw the functional block diagram of simple radar and explain the purpose and functioning of each block in it.	7M

UNIT – II

3.	(a)	What are the various displays employed in a Radar? List out their merits and demerits in brief.	7M
	(b)	Validate the requirement of duplexers in efficient radar systems. Describe the operation of branch and balanced type duplexers with necessary diagrams.	7M
		(OR)	
4.	(a)	Explain i) Mixers ii) TWT	7M
	(b)	Derive the expression for the noise figure of two networks that are in cascade.	7M

UNIT – III

5.	(a)	With the help of a suitable block diagram, explain the operation of a CW radar with non- zero IF in the receiver.	7M
	(b)	Discuss the results of multiple frequency usage for operating FM- CW radar while mentioning the limitations of multiple frequency usage in CW radars.	7M
		(OR)	
6.	(a)	What is a delay line canceller? Illustrate the concept of blind speeds based on the frequency response of a single delay line canceller.	7M
	(b)	In a MTI radar the pulse repetition frequency is 200 Hz and the carrier transmission frequency is 100 MHz. Find its first, second and third blind speeds.	7M

UNIT – IV

7.	(a)	Explain the errors arising in direction finders?	7M
	(b)	Write about Goniometer.	7M
		(OR)	
8.	(a)	Explain the methods of navigation in detail?	7M
	(b)	Write about direction finding using loop antenna.	7M

UNIT-V

9.	(a)	Explain TACAN secondary radar systems.	7M
	(b)	Write short notes on DECCA receivers.	7M
		(OR)	
10.	(a)	Explain in detail about LORAN navigation system.	7M
	(b)	Write short notes on Distance Measuring Equipment.	7M

Q.P. Code: 453212 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: SATELLITE 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)	Explain the origin of satellite communication	10M
	(b)	Write a note on current state of satellite communication	4M
		(OR)	
2.	(a)	List and explain different orbital effects in satellite communication system	10M
	(b)	Write short note on look angle determination	4M
		UNIT – II	
3.	(a)	Discuss in detail about space craft sub system	7M
	(b)	Discuss in detail about communication sub system	7M
		(OR)	
4.	(a)	Discuss in detail about power sub system	7M
	(b)	Recognize the importance of space craft antennas in satellite communication	7M
		UNIT – III	
5.		Explain basic transmission theory with necessary example	14M
		(OR)	
6.	(a)	Discuss about system noise temperature	7M
	(b)	Discuss about G/T ratio for earth station	7M
		UNIT – IV	
7.	(a)	Explain the basic principle of direct sequence spread spectrum(CDMA) system	10M
	(b)	Discuss the importance of PN sequence in CDMA	4M
		(OR)	
8.	(a)	Explain frequency division multiple access (FDMA)	7M
	(b)	Write short notes on SCPC-DAMA satellite system	7M
		UNIT-V	
9.	(a)	Explain how large antennas can be designed on earth station	10M
	(b)	Write a notes on different types of antenna mounts	4M
		(OR)	
10.		Explain the function and elements of earth station design	14M

Q.P. Code: 453412 | **SET - 1**

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

B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020

SUB: CELLULAR & MOBILE 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. Write short notes on: (a) Hand off mechanism with diagrams; (b) Cell Splitting 14M

(OR)

2. (a) Derive C/I from a normal case in a omnidirectional antenna system. 7M
   (b) Write clearly the elements of Radio system design. 7M

UNIT – II

3. (a) Tabulate standard conditions and correction factors at the base station and at mobile unit 7M
   (b) Explain propagation in near-in distance. 7M

(OR)

4. (a) Discuss the merits of point to point model. 7M
   (b) Explain the effect of propagation of mobile signals over water. 7M

UNIT – III

5. Determine the real time co-channel interference measurement of mobile radio trans receivers. 14M

(OR)

6. (a) What is the effect of lowering antenna height in various cases? 7M
   (b) Explain the Real - time co-channel interference measurement. 7M

UNIT – IV

7. (a) Explain how the handoff is initiated. 7M
   (b) Write short notes on MAHO and soft handoff. 7M

(OR)

8. (a) Explain how the handoffs implemented based on signal strength. 7M
   (b) How the dropped call rate is related to the capacity and voice quality. 7M

UNIT-V

9. Explain the principle of CDMA with a neat sketch and write its advantages and disadvantages. 14M

(OR)

10. Explain the following: (a) CDMA, (b) TDMA 14M

Q.P. Code: 552412 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: GEOMETRIC MODELLING (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)	Explain about the simple raster Scan and random scan display system.	7M
	(b)	Explain the basic operations of direct view storage tube	7M
		(OR)	
2.		Explain scan-line filling algorithm in detail	14M

UNIT – II

3.	(a)	Derive the window-to-viewport transformation equations by first scaling the window to the size of the viewport and then translating the scaled window to the viewport Position.	7M
	(b)	Explain midpoint subdivision line algorithm	7M
		(OR)	
4.		Explain the algorithm for line clipping by Cohen-Sutherland algorithm	14M

UNIT – III

5.		Explain the properties of the Bezier curve?	14M
		(OR)	
6.		Briefly explain about Polygon surfaces & quadric surfaces	14M

UNIT – IV

7.	(a)	What is meant by composite transformations?	7M
	(b)	Find the 2D transformation matrix that represents rotation of an object by 30^0 Clock wise, about the origin.	7M
		(OR)	
8.		Drive the matrix form for the geometric transformations in 3-D graphics for the following operations: (i) Translation, (ii) Rotation, (iii) Scalingm, (iv) Mirror reflections.	14M

UNIT-V

9.	(a)	Write about basic characteristics of light.	5M
	(b)	Explain phong model. And how do you relate to the phong shading.	9M
		(OR)	
10.	(a)	Classify the Visible surface detection methods and explain back-face detection	7M
	(b)	Explain z- buffer algorithm in detail.	7M

Q.P. Code: 552612 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: GAS TURBINES AND JET PROPULSION (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 advantages and disadvantages of gas turbines over I.C. engine Plants?	7M
	(b)	In an air standard Brayton cycle air at 1 bar, 20^0 C is supplied to a compressor where the pressure ratio is 4.5 .The maximum temperature is 1000^0K. Determine Thermal efficiency, Network output and work ratio.	7M
		(OR)	
2.		Reheating in gas turbines always improves specific work output but may not improve thermal efficiency of the plant. Discuss with a neat sketch.	14M

UNIT – II

3.	(a)	Explain the principle of jet propulsion and classify the gas turbine engines used for aircraft propulsion.	7M
	(b)	What are the essential features of propulsion devices?	7M
		(OR)	
4.	(a)	Derive an expression for thrust, thrust power and propulsive efficiency of jet propulsive engine.	7M
	(b)	Explain the working of a turbojet engine with a neat sketch.	7M

UNIT – III

5.	(a)	Explain the working of a turboprop engine.	7M
	(b)	What is meant by thrust augmentation and explain how it is affected.	7M
		(OR)	
6.		A turbo jet engine consumes air at the rate of 60.2 Kg/s when flying at a speed of 1200 kmph. Calculate (i) Exit velocity of the jet when enthalpy drop in the nozzle is 200 KJ/kg (ii) Fuel flow rate if A/F is 60:1 (iii)Thrust SFC (iv)Propulsive Power (v) Propulsive efficiency.	14M

UNIT – IV

7.		Explain the working principle of ram jet engine with a neat sketch .State its advantages and disadvantages.	14M
		(OR)	
8.	(a)	Explain the working of pulse jet engine with a neat sketch.	7M
	(b)	Mention the various advantages and disadvantages of the pulse jet engine.	7M

UNIT-V

9.	(a)	Draw a neat line diagram of liquid propellant rocket system and explain its working.	7M
	(b)	List out merits of liquid propellant rockets over solid propellant rockets.	7M
		(OR)	
10.	(a)	How the working of rocket engine is different from all types of jet engines?	7M
	(b)	Explain Staging of Rockets.	7M

Q.P. Code: 552812 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: RENEWABLE ENERGY SOURCES (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)	List the difference between Renewable and Non-Renewable energy sources.	7M
	(b)	Write a short note on layers of the SUN.	7M
		(OR)	
2.	(a)	What are the advantages and limitations of Renewable energy sources?	5M
	(b)	Define Energy and Energy resources. Discuss different ways of their classification with examples in each category.	9M

UNIT – II

3.	(a)	Briefly explain any Six solar thermal energy applications.	4M
	(b)	With the help of neat Diagram, Explain key elements of a Photo-Voltaic cell.	10M
		(OR)	
4.	(a)	With neat diagram, explain solar pond and write any one advantage of it.	9M
	(b)	What are the advantages and Disadvantages of solar PV systems?	5M

UNIT – III

5.	(a)	Derive the expression for power developed due to wind.	7M
	(b)	Describe the main considerations in selecting site for Wind generations	7M
		(OR)	
6.	(a)	List and Explain the factors affecting Biogas generation.	7M
	(b)	With a neat diagram, Explain KVIC Bio gas plant.	7M

UNIT – IV

7.	(a)	Write a note on wave energy conversion system with a suitable sketch.	7M
	(b)	What are the possible sources of Geothermal pollution? How to avoid them.	7M
		(OR)	
8.	(a)	With a suitable diagram, explain open cycle OTEC (Ocean Thermal Energy Conversion) system for ocean thermal energy development.	9M
	(b)	Explain the working of single basin Tidal plant.	5M

UNIT-V

9.	(a)	Describe the classification of Fuel cells.	5M
	(b)	Explain the principle of operation of an alkaline fuel cell.	9M
		(OR)	
10.	(a)	Explain the concept of Joule Thompson effect and its applications.	5M
	(b)	Explain the working principle of Magneto hydrodynamic generator.	9M

Q.P. Code: 553012 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: AUTOMATION & ROBOTICS (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.		Specify the reasons for automation and explain the strategies to be followed to implement the automation effectively in manufacturing industry.	14M
		(OR)	
2.	(a)	How various automated production systems are classified? Explain about them in detail	10M
	(b)	Describe about various elements of automation	4M

UNIT – II

3.	(a)	With a schematic diagram, outline the relevance of linear part-transfer and briefly describe any two mechanisms for the purpose.	10M
	(b)	What is a storage buffer in a production line?	4M
		(OR)	
4.	(a)	Describe the main functions that are utilized to control the operation of an automatic transfer system.	7M
	(b)	Classify and explain about the general methods of transporting work pieces on flow lines.	7M

UNIT – III

5.		Explain different types of robot configurations. Explain the features of each type with applications.	14M
		(OR)	
6.	(a)	What is meant by the term “degrees of freedom” of an industrial manipulator? With a schematic diagram, illustrate pitch, yaw and roll motions of an end effector.	8M
	(b)	List the factors considered in design of grippers.	6M

UNIT – IV

7.	(a)	Write down the general format of the 4×4 homogeneous transformation matrix and its inverse and identify the relevance of the four logical components of the matrices.	7M
	(b)	Write down the properties of the Jacobian matrix of the robot manipulator clearly highlighting the following: (i) The relevance of the Jacobian matrix in mapping velocities between the joint space and the Cartesian space (and vice versa) (ii) The relation between the Jacobian matrix and singularities of the robot manipulator	7M
		(OR)	
8.		Define Trajectory Planning and discuss how it is done in case of a robot having modified constant velocity motion.	14M

UNIT-V

9.		Explain the various types of sensors used in industrial robots with necessary examples.	14M
		(OR)	
10.		Discuss the applications of robots in material transfer, loading and unloading.	14M

Q.P. Code: 652812 | **SET - 1**

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

B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020

SUB: DIGITAL IMAGE PROCESSING (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)	In digital transmission, how many minutes it would take to transmit a digital image of size 2048x2048 with 64 grey levels in the form of packets at a baud rate of 300?	7M
	(b)	Explain the basic concept in image sampling and quantization.	7M
		(OR)	
2.	(a)	How the reflectance and illumination components of an image are related? Explain.	7M
	(b)	Mention the basic properties of digital image.	7M

UNIT – II

3.	(a)	Explain in detail about image restoration process.	7M
	(b)	What are the different noise models in image restoration process?	7M
		(OR)	
4.	(a)	How can you restore the image in the presence of noise by spatial filtering?	7M
	(b)	Explain about periodic noise filtering by frequency domain filtering	7M

UNIT – III

5.	(a)	Explain in detail about RGB and CMY color models.	7M
	(b)	What is boundary extraction in morphological image processing? Explain.	7M
		(OR)	
6.	(a)	Explain in detail about HSI and HSV color models.	7M
	(b)	Contrast between convex hull and thinning.	7M

UNIT – IV

7.	(a)	How is line detected? Explain through the operators.	7M
	(b)	Explain in detail about the region approach to image segmentation.	7M
		(OR)	
8.	(a)	Describe the gradient operators based edge detection with necessary equations and masks.	7M
	(b)	Which the threshold based segmentation methods are used? Explain.	7M

UNIT-V

9.	(a)	Find the DFT of an image f(m,n) = $\begin{bmatrix} 4 & 4 \\ 4 & 5 \end{bmatrix}$.	7M
	(b)	For a digital image f(m,n)= $\begin{bmatrix} 4 & 5 \\ 2 & 7 \end{bmatrix}$, find its average value F(0,0).	7M
		(OR)	
10.	(a)	List the different types of redundancies in digital image.	7M
	(b)	Construct the Huffman coding table for the message ‘KSRMCSE’.	7M

Q.P. Code: 653012 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: MANAGEMENT SCIENCE (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. Managing is an essential activity at all organizational levels. However, the managerial skills required vary with organizational levels. Discuss 14M

(OR)

2. Describe in detail about the framework and theory of management. 14M

UNIT – II

3. Explain the need and importance of strategic management. 14M

(OR)

4. What are the sources of Information to be considered for plant location? 14M

UNIT – III

5. Define Job evaluation. Mention its objectives principles and methods. 14M

(OR)

6. Elaborate EOQ and ABC analysis with examples? 14M

UNIT – IV

7. Explain the steps involved in method study and work measurement? 14M

(OR)

8. List out the approaches of Deming Contribution to Quality? And also explain Deming Chain Reaction? 14M

UNIT-V

9. Elucidate the applications of network techniques to engineering problems? 14M

(OR)

10. A project schedule has the following characteristics as shown in Table 14M

Activity	1,2	1,3	2,4	3,4	3,5	4,9	5,6	5,7	6,8	7,8	8,10	9,10
Name	A	B	C	D	E	F	G	H	I	J	K	L
Time	4	1	1	1	6	5	4	8	1	2	5	7

i. Construct PERT network.
ii. Compute TE and TL for each activity.
iii. Find the critical path.

Q.P. Code: 653212 | **SET - 1**

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020
SUB: ETHICAL HACKING (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)	Explain WHOIS Tools by taking website as an example?	7M
	(b)	Explain different phases of attacks?	7M
		(OR)	
2.	(a)	Explain different types of hacker attacks?	7M
	(b)	Explain Footprinting tools?	7M

UNIT – II

3.	(a)	Explain any four tools of enumeration?	7M
	(b)	Explain any four tools of scanning?	7M
		(OR)	
4.		Write notes on scanning methodologies?	14M

UNIT – III

5.	(a)	Explain Escalating Privileges in detail?	7M
	(b)	Explain about password cracking tools?	7M
		(OR)	
6.	(a)	Explain any six tools of Keyloggers?	7M
	(b)	Explain different types of password attacks?	7M

UNIT – IV

7.		Explain in detail Tools for Identifying Windows OS Vulnerabilities?	14M
		(OR)	
8.	(a)	Write short notes on C programming fundamentals?	7M
	(b)	How to run the Windows OS vulnerabilities?	7M

UNIT-V

9.	(a)	Write any five phases of penetration testing?	7M
	(b)	Explain different types of Penetration Testing?	7M
		(OR)	
10.		Write short notes on following tools. a) AppScan, b) HackerShield, c) SAINT, d) SecureScan, e) WebInspect	14M

Q.P. Code: 653412 | **SET - 1**

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

B. Tech. VIII Sem. (R15) Regular & Supple. Examinations of September 2020

SUB: SOFTWARE PROJECT MANAGEMENT (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)	What is a process? Explain the three levels of process and their attributes.	7M
	(b)	Give the modern process approaches for solving conventional problems.	7M
		(OR)	
2.	(a)	State and explain the principles of conventional Software Engineering.	7M
	(b)	How to improve team effectiveness? Explain in detail.	7M

UNIT – II

3.	(a)	What do you mean by Software architecture? Discuss the importance of software architecture and it's linkage with modern software development process.	7M
	(b)	Discuss about pragmatic artifacts in detail.	7M
		(OR)	
4.	(a)	Explain in detail about the objectives and outcomes of Elaboration phase.	7M
	(b)	Explore the different aspects of Architecture from management perspective.	7M

UNIT – III

5.	(a)	What are milestones in a software project management? What is the importance of milestones? How do you define milestones? Explain.	7M
	(b)	Discuss the conventional work breakdown structure issues.	7M
		(OR)	
6.	(a)	What is a workflow? Explain about software process workflows.	7M
	(b)	Discuss about periodic status assessment in detail.	7M

UNIT – IV

7.	(a)	What are the Quality Indicators that measure software change across the project?	7M
	(b)	Discuss the necessity of metrics automation in Software project management.	7M
		(OR)	
8.	(a)	Explain the important seven core metrics to manage development projects effectively.	7M
	(b)	What is the need for process automation? Explain in detail.	7M

UNIT-V

9.	(a)	Explain the process discrimination that result from differences in process maturity.	7M
	(b)	Explain in detail about Modern Software Economics.	7M
		(OR)	
10.	(a)	Illustrate two dimensions of process discriminants.	7M
	(b)	Discuss various culture shifts that are necessary to transition successfully from conventional practice to a modern software management process.	7M