AR16

CODE: 16CE3011 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Regular & Supplementary Examinations, October-2019

GEOTECHNICAL ENGINEERING-I

(Civil Engineering)

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

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Write briefly about the structure of clay minerals – Kaolinite, Montmorillonite and Illite with sketches.	6M
	b)	A soil has liquid limit of 25% & flow index of 12.5%. If the plastic limit is 15%, determine the plasticity index & toughness index. If for the above soil, the natural moisture content is 20%; find the liquidity index & consistency index	8M
		(OR)	
2.	a)	Write a note on i) Clay mineralogy ii) consistency limits	6M
	b)	In order to find the relative density of sand, a mould of volume 1000ml was used. When the sand was dynamically compacted in the mould, its mass was 2.10kg, whereas when the sand was poured loosely, its mass was 1.635kg. If the in-situ dry density of the soil was 1500kg/m^3. Calculate the relative density of the soil. Take G=2.70.	8M

UNIT-II

3.	a)	What is Darcy's law? Explain how the permeability of soil is affected by various factors?	6M
	b)	At a construction site, a 3 m thick clay layer is followed by a 4m thick gravel layer which is resting on impervious rock. A load of 25 kN/m^2 is applied suddenly at the surface. The saturated unit weight of the soil is 19 kN / m^3 and 20 kN/m^3 for the clay and gravel layers respectively. The water table is at the surface. Draw diagrams showing variation with depth of total, neutral and effective stress in the layers.	8M
		(OR)	
4.	a)	What is quick sand condition? Derive the expression for the critical hydraulic gradient.	6M
	b)	A sand deposit consists of two layers. The top layer is 2.5 m thick (γ = 1709.67 kg/m^3) and the bottom layer is 3.5m thick (γsat = 2064.5 kg/m^3). The water table is at a depth of 3.5m from the surface and the zone of capillary saturation is 1m above the water table. Draw the diagram showing the variation of total stress, neutral stress, and effective stress.	8M

UNIT-III

5.	a)	Discuss any one approximate method of determination of vertical stress.	6M
	b)	Three concentrated loads of 3000 kN, 1000 kN and 2000 kN, spaced at 4.5m and 3.5m between the first, second and third loads, are acting in one vertical plane at the surface of a soil mass. Calculate the resultant stress produced by these loads on a horizontal plane 1.5m below the surface at points directly below the loads.	8M

(OR)

6. a) Explain the principle of construction of Newmark's influence chart and its uses. 8M
   b) A load 100 kN acts as a point load at the surface of the soil mass. Estimate the stress at a point 3 m below and 4 m away from the point of action of load by Boussinesq's formula. Compare the value with the result from Westergard's theory. 6M

UNIT-IV

7. a) State the assumptions made in Terzaghi's one dimensional Consolidation theory. 6M
   b) The following data refers to a compaction test as per IS (light compaction) 8M

water content %	12	14	16	18	20	22
weight of wet soil (kg)	1.68	1.85	1.91	1.87	1.87	1.85

If the specific gravity of soil grains is 2.68, plot the compaction curve and obtain the maximum dry density and OMC.

(OR)

8. a) What is over consolidation ratio? How is pre-consolidation pressure of a soil determined? 7M
   b) There is a bed of compressible clay of 4m thickness with pervious sand at top and impervious rock at bottom. In a consolidation test on an undisturbed specimen of clay from this deposit, 90% settlement was reached in 4hours. The specimen was 20mm thick. Estimate the time in years for the building founded on this deposit to reach 90% of its final settlement. 7M

UNIT-V

9. a) A direct shear on cohesive soil specimens yielded the following results: 8M

Normal Stress (kPa)	100	200	300	400
Shear stress at failure (kPa)	98	139	180	222

What would be the deviator stress at failure, if a triaxial test was conducted on the same soil specimen at a cell pressure of 150 kPa?

   b) Explain vane shear test procedure to obtain shear strength of a soil. 6M

(OR)

10. a) Explain advantages and disadvantages of direct shear test over triaxial shear test. 6M
    b) UU Triaxial tests on saturated clay samples, 38 mm diameter and 76 mm height, give the results as shown in table. Find total stress parameters. 8M

σ_3(kPa)	Axial load (N)	Axial Deformation (mm)
200	195	9.5
400	194	10.1
600	199	10.3

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AR16

CODE: 16EE3014 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Regular / Supplementary Examinations, October-2019

POWER SYSTEMS-III

(Electrical and Electronics Engineering)

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

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. a) "Restriking voltage can be reduced with resistance switching"- Justify your Answer? [7M]
   b) In a short circuit test on a 72.5 KV circuit breaker, the following readings were obtained on a single frequency transient curve. [7M]
      (i) Time to reach the peak transient Restriking voltage= 93μs.
      (ii) If the peak Restriking voltage = 137KV. Calculate the average RRRV and the frequency of transient oscillations

(OR)

2. a) Define the Following Terms [6M]
      (i) Symmetrical Breaking Capacity (ii) Making Capacity
   b) Determine the rated symmetrical breaking current and making current of a 3 pole circuit breaker which is rated as 1300 A, 400 MVA, 11 KV, 3 second vacuum circuit breaker. What is its rated voltage, rated current and rated short time rating, Making capacity and symmetrical breaking capacity of breaker [8M]

UNIT-II

3. a) Compare different types of distance relays. [6M]
   b) Describe the operating Characteristics of impedance relay and MHO relay using R-X Diagram [8M]

(OR)

4. a) Compare and conclude the performances of an induction cup relay and induction disc relay. [7M]
   b) "Static relays are widely used in protection system compared to electromagnetic relays"- Justify. [7M]

UNIT-III

5. a) How much percentage of stator winding is protected of an alternator? How is it achieved? [7M]
   b) A generator is protected by restricted earth fault protection. The generator ratings are 13.2kv, 10MVA. The percentage of winding protected against phase to ground fault is 85%. The relay setting is such that it trips for 20% out of balance calculate the resistance to be added in the neutral to ground connection [7M]

(OR)

6. a) Describe the Working principle of Buchholz relay and for which faults is it employed? [8M]

   b) A three phase, 50MVA, 132kV/66kV Star-Delta transformer is protected by differential protection. Suggest suitable CT ratios and show the connection of the CTs on either side of the transformer. [6M]

UNIT-IV

7. Describe briefly about the stepped time-distance characteristics of three distance relaying units used for I, II and III zone of protection of transmission lines [14M]

(OR)

8. a) Explain the Translay protection scheme for feeders [7M]

   b) Discuss briefly about the time graded over current protective for parallel feeders. [7M]

UNIT-V

9. a) Explain briefly about protection against direct lightning strokes and travelling waves for power system components? [6M]

   b) Explain the principle of operation of Valve type lightning arresters. [8M]

(OR)

10. a) Compare different types of neural grounding. [8M]

    b) A 33Kv, 3 Phase 50Hz, Overhead line 60Km long has a capacitance to ground of each line equal to 0.015micoFarads per km. Determine the inductance and KVA rating of the Peterson coil. [6M]

AR16

CODE: 16ME3013 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Regular / Supplementary Examinations, October-2019

DESIGN OF MACHINE MEMBERS – I

(Mechanical Engineering)

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

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	What are the design considerations in casting	4M
	b)	A cylindrical shaft made of steel of yield strength 700MPa is subjected to static loads consisting of bending moment 10kN-m and a torsional moment of 30kN-m.Determine the diameter of shaft using any three theories of elastic failure and assuming a factor of safety of 2. Take E = 210GPa and Poisson's ratio = 0.25	10M
		(OR)	
2.	a)	Explain the manufacturing considerations in design	4M
	b)	A simply supported beam has a concentrated load at the centre which fluctuates from a value of P to 4 P. The span of the beam is 500 mm and its cross-section is circular with a diameter of 60 mm. Taking for the beam material an ultimate stress of 700 MPa, a yield stress of 500MPa, endurance limit of 330 MPa for reversed bending and a factor of safety of 1.3, calculate the maximum value of P. Take a size factor of 0.85 and a surface finish factor of 0.9.	10M

UNIT-II

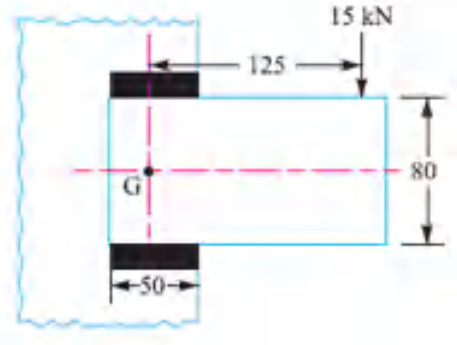
3.	a)	Explain any four locking devices	4M
	b)	A flanged bearing is fastened to a frame by means of four bolts spaced equally on 500 mm bolt circle. The diameter of bearing flange is 650mm and a load of 400 KN acts at a distance 250 mm from the frame. Determine the size of the bolts, taking safe tensile stress as 60MPa for the material of the bolts.	10M
		(OR)	
4.		Explain in detail all power screws with a neat sketch.	14M

UNIT-III

5.	a)	How is the allowable stress calculated for a riveted joint subjected to alternating type of load	4M
	b)	The end of a cylindrical boiler shell is closed by a lap joint using rivets. The maximum pressure in the boiler is 1MPa. The axial length is limited to 2 m while its storing capacity is 2 m^3. Design the suitable lap joint giving a neat sketch. The permissible stresses in shear and crushing of rivets may be taken as 30MPa and 70MPa. The permissible tensile stress for the plate material is 80MPa	10M
		(OR)	

6. a) Sketch and discuss various types of welded joints 4M

b) A bracket carrying a load of 15 KN is to be welded as shown in Fig. Find the size of weld required if the allowable shear stress is not to exceed 80MPa. 10M



UNIT-IV

7. The engine of a ship develops 420 kW and transmits the power by a horizontal propeller shaft, which runs at 120 rpm. It is proposed to design a hollow propeller shaft with inner diameter as 0.6 of outer diameter. Considering the torsion alone calculate the diameter of the propeller shaft if stress in the material is not to exceed 63 N/mm^2 and also the angular twist over a length of 2500 mm is not be more than 100. The modulus of the rigidity of the shaft material is 80 KN/mm 14M

(OR)

8. a) The bolt in the flange coupling should be made weaker than the other components of coupling? Why 4M

b) In a flange shaft coupling having 37.5mm shaft diameter, it is desired that torsional stress in the shaft will not exceed 25 N/mm^2. The outside diameter of the coupling limited by space is 200mm. There are three 15mm bolts on a bolt circle diameter of 140mm. The radial flange thickness is 18mm. Determine the following: 10M

i) The power that may be transmitted at 600 rev/min.
ii) The shearing stress in the bolts.
iii) The bearing pressure on the bolts.

UNIT-V

9. a) Derive suitable equations in terms of torque, cross section of key for same shaft and key material 4M

b) A square key is to be used to key a gear to a 35 mm diameter shaft. The length of the hub of the gear is 60mm. Both shaft and key are made of same material, having an allowable shear stress of 55Mpa. What are the minimum dimensions of the key if 400N-m of torque is to be transmitted 10M

(OR)

10. Design a spring for spring loaded safety valve for the following Conditions: Operating pressure 100 N/cm^2. Diameter of valve seat 100 mm. Design shear stress for the spring is 400 N/mm^2,G=0.86×105N/mm^2. The spring is to be kept in a casing of 120 mm inner diameter and 400 mm long. The spring should be at maximum lift of 6 mm when the pressure is 107.5 N/cm^2. 14M

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AR16

CODE: 16EC3013 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Regular & Supplementary Examinations, October-2019

DIGITAL COMMUNICATIONS

(Electronics and Communication Engineering)

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

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Explain PCM scheme with block diagram and derive the expression for signal to noise ratio in PCM.	8 M
	b)	Discuss the two companding laws used for non uniform quantization.	6 M
		(OR)	
2.	a)	Explain the encoding scheme used in DPCM scheme with block diagram description and mathematical modelling.	6 M
	b)	What are the noises present in Delta Modulation. Explain the modulation scheme in detail to avoid these noise effects.	8 M

UNIT-II

3.	a)	Illustrate the detection of QPSK scheme with neat block diagram and signal space representation for the data input 10110001.	8 M
	b)	Obtain the expression for probability of error of FSK Receiver.	6 M
		(OR)	
4.	a)	Explain the generation of BPSK scheme using balanced product modulator with mathematical analysis and waveforms.	8 M
	b)	Obtain the expression for probability of error in Optimum filter Receiver.	6 M

UNIT-III

5.	a)	Define Entropy and Prove any two properties of Entropy.	8 M
	b)	Describe the Shannon capacity limit and discuss the trade off between bandwidth and SNR.	6 M
		(OR)	
6.	a)	Define Mutual Information and Prove the relation $I(X:Y) = H(X) + H(Y)-H(X,Y)$	6 M
	b)	A source with 6 emitting messages A,B,C,D,E having probabilities $P(A) = P(B) =0.1$, $P(C) = P(D) = 0.15$, $P(E) = P(F) =0.25$. Find coding efficiency using Shannon Fano coding.	8 M

UNIT-IV

7. a) For a (6,3) systematic linear block code the three parity check bits c4 , c5, c6 are formed from the following equations: c4=d1 (xor) d3 ; c5= d1 (xor) d2 (xor) d3; c6= d1 (xor) d2. i) Write down the generator matrix G ii) Suppose that the received word is 010111. Decode this received word by finding the location of the error and the transmitted data bit . — 9 M

   b) What are Cyclic codes ? Explain the properties of Cyclic codes. — 5 M

(OR)

8. a) The generator polynomial of a (7,4) systematic cyclic code is $g(x) = 1+x+x^3$. Find the code words for the messages (1110) using shift register method. — 8 M

   b) Write notes on Hamming Code with an example showing single bit error correction — 6 M

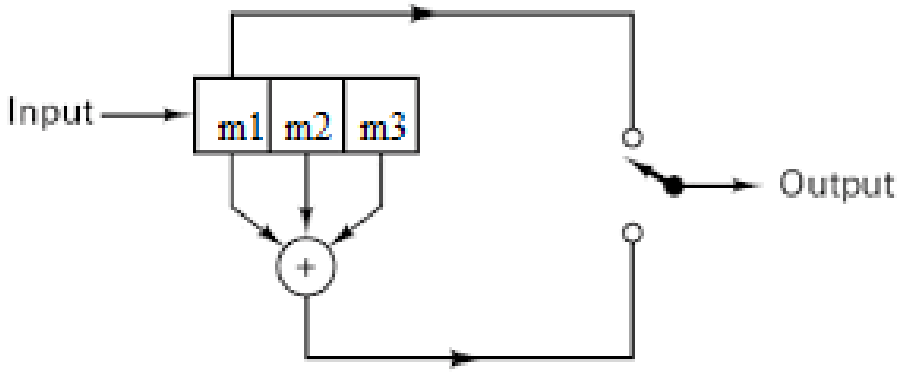
UNIT-V

9. a) For a convolutional encoder with g1=[101], g2=[110] and g3=[111], draw the state diagram and determine the output code word in transform domain approach for message u=[10110] — 8 M

   b) Explain the Viterbi decoding algorithm for convolutional codes. — 6 M

(OR)

10. a) Decode the Received code word [10 11 10] using viterbi algorithm and find the correct transmitted code word using the given convolutional encoder. — 8 M



   b) Illustrate the Time domain approach of convolutional encoding. — 6 M

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AR16

CODE: 16CS3011 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Regular & Supplementary Examinations, October-2019

UNIX INTERNALS

(Common to CSE & IT)

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

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a	Write the syntax of the following UNIX commands (i) echo (ii) who (iii) mkdir (iv) wc (v) cp (vi) du (vii) awk	[7M]
	b	Elaborate the steps involved to create a file called myfile.txt which contains some text and save the file using vi editor	[7M]
		(OR)	
2.	a	Analyse grep command with options ?	[7M]
	b	Discuss about the file permissions in unix operating system? Identify the appropriate unix command which will give read, write and execute permission only to the owner, read permission to user and others?	[7M]

UNIT-II

3.	a	Write a shell script that computes the gross salary of a employee according to the following rules: i)If basic salary is < 1500 then HRA =10% of the basic and DA =90% of the basic. ii)If basic salary is >=1500 then HRA =Rs500 and DA=98% of the basic	[7M]
	b	Explain about the functionality of unix operating system?	[7M]
		(OR)	
4.	a	What is shell programming? Write a shell script to create a menu which display: i. List of files ii. Contents of a files iii. process status iv. Current date v. clear the screen vi. current users of system	[7M]
	b	Explain about redirection operators with an example? Discuss about this command: ls Documents ABC> dirlist 2>&1	[7M]

UNIT-III

5.	a	Explain the syntax and each argument of the following functions: a) lstat b) chmod c) chown	[7M]
	b	List five system calls related to I/O? Give the syntax and the example for each system call?	[7M]
		(OR)	
6.	a	Differentiate between system call and library functions?	[7M]
	b	Explain the following directory API with example (i) opendir (ii) readdir (iii) closedir	[7M]

UNIT-IV

7.	a	How did you kill the last background job without knowing its PID? will it run in all shells?	[7M]
	b	Describe about zombie process and orphan process?	[7M]
		(OR)	
8.	a	Give the syntax of the following i).fork ii) vfork iii) exit iv) exec	[7M]
	b	Which process do you think may have maximum number of children? What is its PID? can you divide its children into two categories?	[7M]

UNIT-V

9.	a	Explain in detail about message queues?	[7M]
	b	Analyse the following command ls | pr | lpr	[7M]
		(OR)	
10.	a	Compare named pipes Vs name less pipes	[7M]
	b	Explain about semaphores?	[7M]

AR13

CODE: 13EE3014 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, October, 2019

POWER SYSTEMS – II
(Electrical and Electronics Engineering)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) Why Skin effect is absent in dc system
   b) What are the disadvantages of unsymmetrical spacing
   c) What is mean by Ferranti effect?
   d) Write down the classification of overhead transmission line
   e) What is mean by Surge impedance?
   f) Write the values of A,B,C,D constants of short transmission line .
   g) Write the factors affecting the corona loss
   h) What are the materials using in insulators?
   i) What is the use of sag templates?
   j) What is the purpose of insulator?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Derive the expression for inductance of a three phase double circuit with unsymmetrical spacing but transposed 6M
   b) Explain the types of conductors used in over head transmission line. 6M

(OR)

3. a) Derive expressions for Inductance of a single phase two wire line. 6M
   b) A single circuit, 3-phase, 50Hz transmission line consists of three conductors arranged as triangle and distance between conductors are 5m, 5m and 8m. If the conductors have diameter equal to 0.8cm. find (i) inductive reactance of 25km long line per km per phase and (ii) also calculate capacitive reactance for same line. 6M

UNIT-II

4. a) Derive the A,B,C,D parameters of medium lines from Nominal T method? 6M
   b) Briefly explain different types of transmission lines. 6M

(OR)

5. a) Derive the expressions for sending end voltage in nominal π method and end Condenser method. 6M
   b) A 3-Phase ,50HZ transmission line delivers 20MW at 0.8 p.f lagging and at 132kv .The resistance and reactance of the line per phase are 28 Ω and 63 Ω respectively ,While capacitance admittance is 4×10^{-4} siemen/phase. Calculate (i) regulation (ii) efficiency of transmission .Use nominal T method. 6M

UNIT-III

6.	a)	Starting from the fundamentals determine the equivalent- Π network parameters of a long transmission line.	6M
	b)	Explain importance of surge impedance and surge impedance loading with respect to an overhead transmission line.	6M
		(OR)	
7.	a)	Derive the necessary equations for finding the performance of long transmission lines (Rigorous method)	6M
	b)	What do understand by long transmission lines? How capacitance effects are taken into account in such lines?	6M

UNIT-IV

8.	a)	Explain the Ferranti effect and charging current of the transmission line.	6M
	b)	Explain Reflection and derive the equation for reflection factor for different conditions of the line.	6M
		(OR)	
9.	a)	Explain the Skin and Proximity effects.	6M
	b)	Describe the phenomenon of corona and derive its critical voltage.	6M

UNIT-V

10.	a)	Explain the different types of insulators and give the application of each insulator	6M
	b)	Explain the methods to improving the string efficiency.	6M
		(OR)	
11.	a)	Derive the expression for sag for equal supports.	6M
	b)	For a string insulator with four discs, the capacitance of disc is 10 times the capacitance between the pin and earth. Calculate the voltage across each disc when used on a 66kV line. Also calculate the string efficiency	6M

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AR13

CODE: 13EC3014 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, October, 2019

DIGITAL COMMUNICATIONS
(Electronics and Communication Engineering)

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

PART-A

ANSWER ALL QUESTIONS [1 x 10 = 10 M]

1. a) What are disadvantages of PCM system?
   b) What should be the minimum bandwidth required to transmit a PCM
   c) List the requirements of Pass band transmission
   d) How DPSK is different from PSK?
   e) Define entropy.
   f) What is probability of bit error.
   g) Define Hamming Distance.
   h) What are disadvantages of DM system
   i) What is meant by quantization?
   j) What is coherent detection?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Discuss the elements of digital communication system and list the advantages of it. 6M
   b) What is slope overload distortion and granular noise in Delta Modulation? How is it removed in ADM? 6M

(OR)

3. a) Define quantization? What are types of quantization? Explain them 6M
   b) How is differential PCM advantageous over PCM? Draw the block diagrams of DPCM transmitter and receiver and analyze its parameters 6M

UNIT-II

4. a) Explain the principle of QPSK system. Compare binary PSK and QPSK Schemes. 6M
   b) What is matched filter? How it differs from optimum filter? Derive an expression for impulse response of matched filter. 6M

(OR)

5. a) Explain with neat block diagram the generation and recovery of BPSK 6M
   b) Derive the expression for probability of error of ASK. 6M

UNIT-III

6.	a)	Define Entropy and explain the properties of Entropy.	6M
	b)	Explain about Huffman coding.	6M
		(OR)	
7.	a)	Explain the Huffman coding in detail along with example.	6M
	b)	Discuss Shannon- Fano and Huffman coding algorithms with an example and compare them.	6M

UNIT-IV

8.	a)	Explain the matrix representation of Linear Block codes.	6M
	b)	Consider (6, 3) Linear block code. Find Generator matrix, Parity check matrix and error correcting capabilities of the code	6M
		(OR)	
9.	a)	Design a decoder with shift registers implementation by considering an example.	6M
	b)	Give algebraic structure of Binary Cyclic codes.	6M

UNIT-V

10.	a)	Develop code tree in convolution codes.	6M
	b)	Explain the viterbi algorithm for the decoding of convolutional codes.	6M
		(OR)	
11.	a)	Explain convolution codes using transform domain approach with example.	6M
	b)	What are different decoding methods of convolution codes and explain them.	6M

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AR13

CODE: 13HS3006 **SET - 2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, October, 2019

INDUSTRIAL MANAGEMENT SCIENCE
(Common to CSE & IT)

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

PART - A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) Management is a social process. Justify your answer with an example.
   b) Relate your needs to the hierarchy of needs proposed by Abraham Maslow.
   c) Explain why Joint Stock Company Form of Business Organization is popular.
   d) Classify and explain different types of capital.
   e) Explain the difference between survey method and statistical method.
   f) What does the law of demand state?
   g) Explain the use of Break Even Analysis.
   h) Give examples for Storage and Inventory costs.
   i) Describe the different market structures.
   j) Examine the features of monopolistic competition.

PART - B

Answer one question from each unit **[5x12=60M]**

UNIT - I

2. a) Using McGregor's theory, explain why a Theory X person may need to be motivated in a different way to a Theory Y person. 6 M
   b) Can motivation be increased? Examine various factors that influence motivation. 6 M

(OR)

3. a) Compare Maslow's need hierarchy theory and Herzberg's two factor theory. 6 M
   b) Interpret the basic idea underlying the contingency view and how would you go about discovering key contingencies facing an organization. 6 M

UNIT - II

4. Alpha Co. Ltd., is considering purchase of a new machine. Two alternative machines (A and B) have been suggested, each having an initial cost of Rs. 4,00,000 and requiring Rs. 20,000 as additional working capital at the end of I year. Earnings after taxation are expected to be as follows:

Year	Machine 'A' (Rs.)	Machine 'B' (Rs.)
1	40,000	1,20,000
2	1,20,000	1,60,000
3	1,60,000	2,00,000
4	2,40,000	1,20,000
5	1,60,000	80,000

12 M

The company has a target of return on capital of 10% and on this basis, you are required to compare the profitability of the machines and state which alternative you consider as financially preferable under NPV method

(OR)

5. a) Distinguish between Private Limited Company and Public Limited Company. 6 M
   b) Amongst various types of organizations, Sole proprietorship ensures quickest growth. Comment 6 M

UNIT – III

6. a) Explain the nature and scope of demand determinants. 6 M
   b) Explain in detail the measurement and significance of elastic demand forecasting. 6 M

(OR)

7. The manager of the I-85 Carpet outlet needs to be able to forecast accurately the demand for Soft Shag carpet (its biggest seller). If the manager does not order enough carpet from the carpet mill, customers will buy their carpets from one of the outlets many competitors. The manager has collected the following demand data for the past eight months. Compute a three-month moving average forecast and a weighted three-month moving average forecast for months 4 through 9. Assign weights 0.55, 0.33, 0.12 to the months in sequence, starting with the most recent. 12 M

Month	1	2	3	4	5	6	7	8
Demand	500	1000	600	800	1400	1000	900	1200

UNIT - IV

8. An Industry needs 15,000 units/year of a bought-out component which will be used in its main product. The ordering cost is Rs 125/order and the carrying cost/unit/year is 20% of purchase price per unit. The purchase price per unit is Rs.75. Find i) Economic order quantity ii) No of orders made per year iii) Time between successive orders & iv)Total cost of inventory. 12 M

(OR)

9. a) Define Break-even point & how do you determine it. Show graphical presentation of Break Even Analysis. 4 M
   b) A Company prepares a budget to produce 3, 00,000 units, with fixed costs as Rs. 15,00,000/- and average variable cost of Rs.10/- per unit. The selling price is to yield 20% profit on cost. You are required to calculate: (a) P/V ratio, (b) BEP in Rs. and in Units. 8 M

UNIT - V

10. a) List and explain the causes for the emergence of Monopoly. 6 M
    b) Elaborate how price-output decisions can be taken by a Monopolist. 6 M

(OR)

11. a) Elucidate the process of Price-output determination in case of perfect competition market. 6 M
    b) Explain the features of different pricing strategies. 6 M

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