AR16

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021

GEOTECHNICAL ENGINEERING-II
(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) Explain Rotary and Core drilling methods and its suitability depending on the site conditions. **7M**

   b) Discuss standard penetration test. What are the various correction? What is the importance of the test in geotechnical engineering? **7M**

(OR)

2. a) Explain with neat sketch scraper bucket and piston samplers. What are its uses? **7M**

   b) Draw the neat sketch of log of a bore hole with complete details of exploration showing levels in cross section
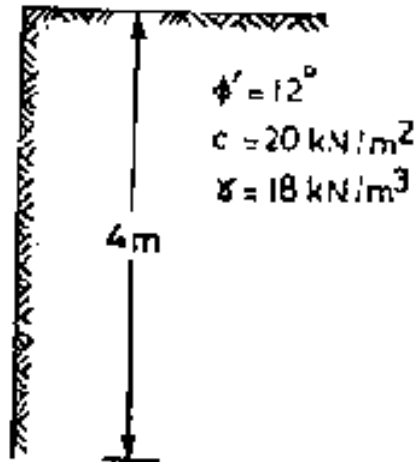
UNIT-II

3. a) Describe bishop's simplified method. What are its advantages over conventional Swedish circle method? **7M**

   b) What is stability number? What is its utility in the analysis of stability of slopes? Discuss the uses of stability charts. **7M**

(OR)

4. a) What will be the factors of safety with respect to average shearing strength, cohesion and internal friction of a soil, for which the shear strength parameters obtained from the laboratory tests are $c' = 32$ kN/m^2 and $\Phi_1 = 18°$; the expected parameters of mobilized shearing resistance are $c'_m = 21$ kN/m^2 and $\Phi'_m = 13°$ and the average effective pressure on the failure plane is 110 kN/m^2. For the same value of mobilized shearing resistance determine the following: **14M**

   i) Factor of safety with respect to height;

   ii). Factor of safety with respect to friction when that with respect to cohesion is unity; and

   iii). Factor of safety with respect to strength.

UNIT-III
5. a) Discuss the principles of the design of retaining walls. 7M
    b) Determine the stresses at the top and bottom of the cut shown in Fig. 7M
       Also determine the maximum depth of potential crack and the
       maximum depth of unsupported excavation.

(OR)

6. a) Discuss culmann's method for the determination of active earth 7M
       pressure.
    b) Determine the active pressure on the retaining wall shown in Fig. 7M
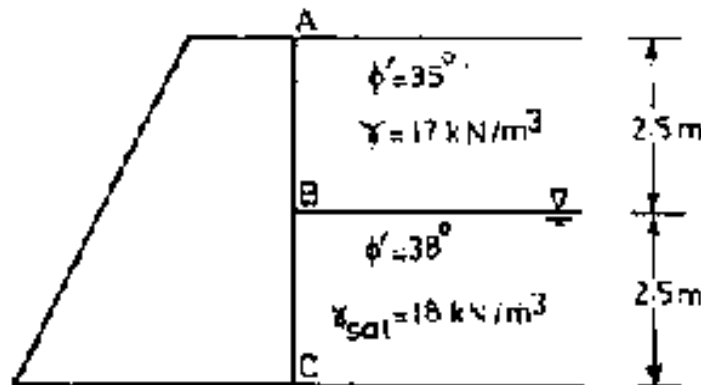

UNIT-IV
7. a) A footing 2 m square is laid at a depth of 1.3 m below the ground 7M
       surface. Determine the net ultimate bearing capacity using IS code
       method. Take $\gamma = 20kN/m^3$, $\emptyset' = 30^0$ and c' = 0 N_C=30.14, NQ=18.40,
       $N\gamma$=22.40
       (a) The water table raies to the level of the base,
       (b) The water table raises to the ground surface, and
       (c) The water table is 1 m below the base.
    b) 5. A strip footing of 2 m with is founded at a depth of 4 m below the 7M
       ground surface. Determine the net ultimate bearing capacity, using (a)
       Terzaghi's equation (N_C=5.7, NQ=1, $N\gamma$=0), (b) Meyerhof. (N_C=5.14,
       NQ=1, $N\gamma$=0) The soil is clay ($\emptyset = 0$, c = 10 kN/m^2). The unit weight
       of the soil is 20 kN/m^3

(OR)

8. Fig. shows a square footing resting on a sand deposit. The pressure at the level of the foundation ($\bar{q}$) is 200 kN/m². The figure also shows the variation of the elastic modulus with depth. Determine the settlement of the foundation after 6 years of construction.   14M
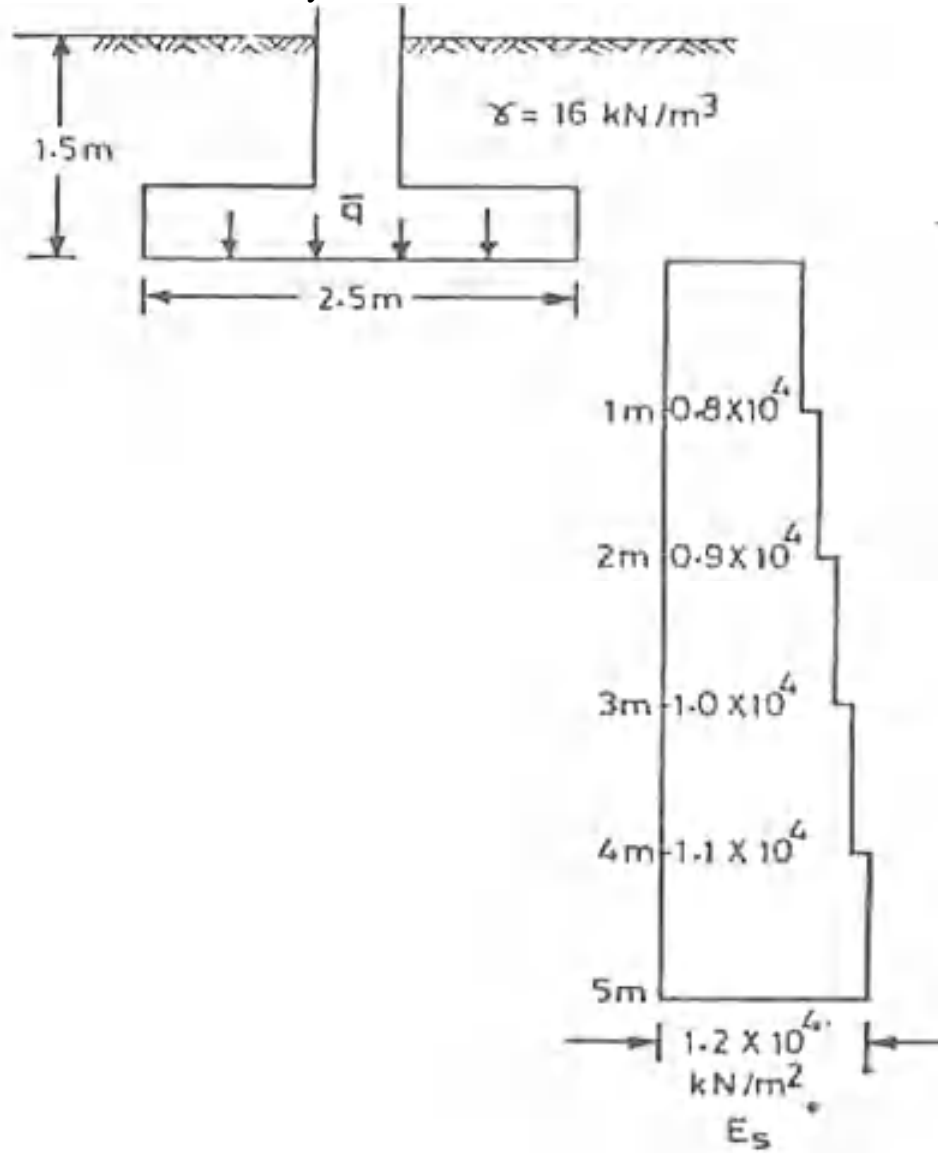
UNIT-V

9. a) What are the conditions where a pile foundation is more suitable than a shallow foundation?   7M

   b) A pile group consists of 9 friction piles of 30 cm diameter and 10 m length driven in clay (Cu = 100 kN/m², γ = 20 kN/m³), as shown in Fig. Determine the safe load for the group (FoS = 3, α = 0.6).   7M
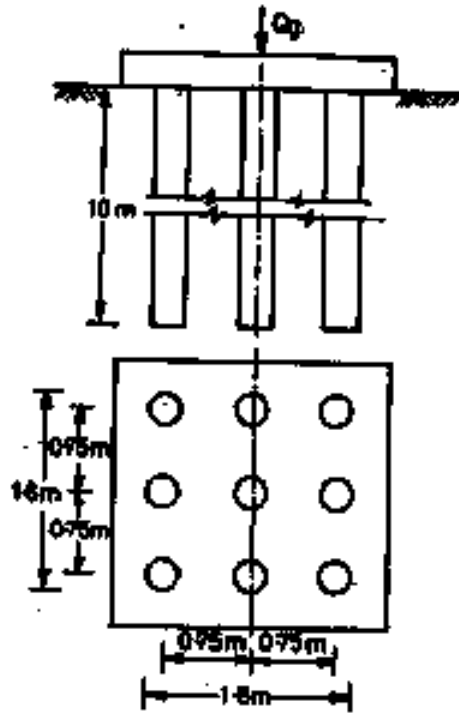
10. a) How would you estimate the load carrying capacity of a pile in cohesive and cohesionless soils?   7M

    b) A group of friction piles of 30 cm diameter is subjected to a net load of 2000 kN, as shown in Fig. Estimate the consolidation settlement.   7M
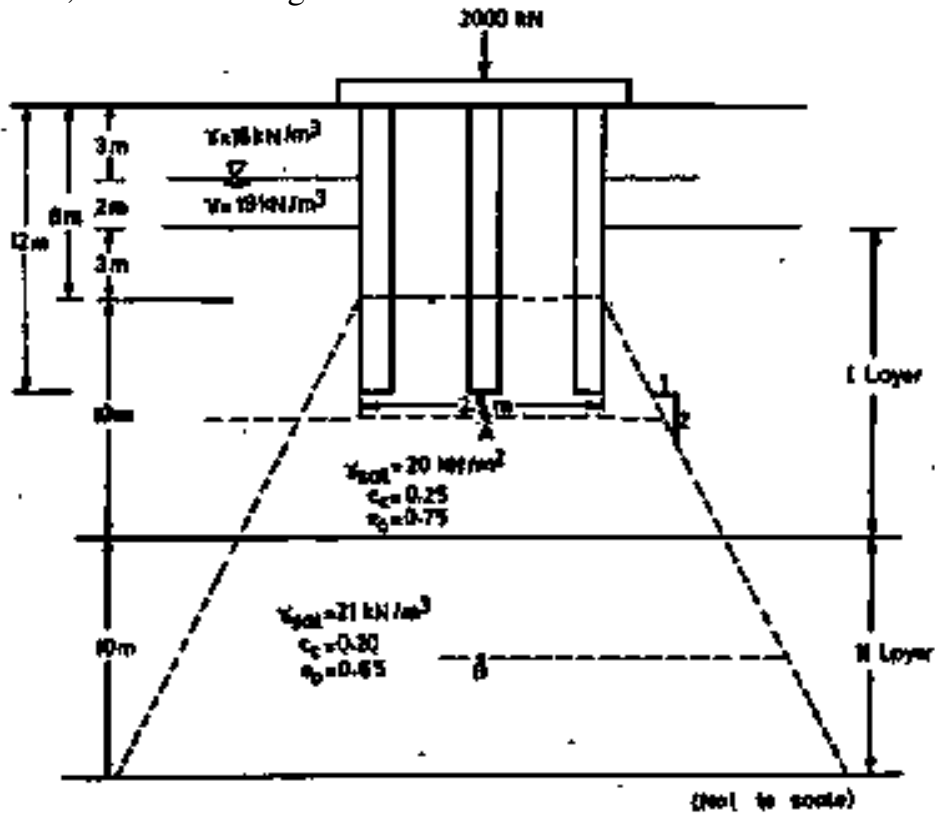
AR16

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021
ANALOG AND DIGITAL ELECTRONIC CIRCUITS
(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)	Explain how RC circuit acts as a differentiator?	7M
	b)	Draw and explain response of a differentiator for a square wave input?	7M

(OR)

2.	a)	Explain how diode can be used as a clipper?	7M
	b)	Explain application of diode as a clamper?	7M

UNIT-II

3.	a)	With a neat circuit explain how transistor can be used as a switch?	7M
	b)	Explain how diode can be used as a switch?	7M

(OR)

4.	a)	With a neat circuit explain working of Bistable Multivibrator?	7M
	b)	With a neat circuit explain working of Schmitt Trigger?	7M

UNIT-III

5.	a)	Explain characteristics of an ideal OpAmp?	7M
	b)	Explain how OpAmp is used as a Non inverting Amplifier?	7M

(OR)

6.	a)	Explain how OpAmp is used as an Integrator. Draw relevant waveforms?	7M
	b)	Explain concept of virtual ground in an OpAmp?	7M

UNIT-IV

7.	a)	Draw circuit diagram of an Astable Multivibrator using 555 Timer?	7M
	b)	Draw the pin configuration of 555 Timer IC and explain function of each pin?	7M

(OR)

8.	a)	Explain how R-2R Ladder converts digital data to analog data?	7M
	b)	Draw the diagram of a dual slope ADC and explain its working and draw its relevant waveforms?	7M

UNIT-V

9.	a)	Design EXOR gate using CMOS technology and explain its working using truth table?	7M
	b)	Differentiate between diode and transistor logics?	7M

(OR)

10.	a)	Explain the working of an Emitter coupled logic with neat diagrams?	7M
	b)	Compare various logic families?	7M

AR16

CODE: 16ME3020   SET-1

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021

CAD/CAM
(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) Elaborate on the basic requirements that CAD software has to satisfy. 6M
   b) List out benefits of CAD/CAM. 8M
   (OR)
2. a) Explain 3-D scaling, rotation, reflection and translation with suitable example? 8M
   b) Find the transformed coordinates when a line [(3, 4), (4, 2)] is rotated about a z-axis by an angle of 45° in anticlockwise direction? 6M

UNIT-II

3. a) Explain B-spline surface with a neat figure and state the advantages of this surface over Bezier surface. 8M
   b) Explain any two hidden surface removal algorithms. 6M
   (OR)
4. a) Explain constructive solid geometry (CSG) technique 8M
   b) Give details of a few editing commands used in a drafting system. 6M

UNIT-III

5. a) What is the importance of G-codes in part programming? Give examples. 6M
   b) Differentiate between
      i) Absolute and Incremental positioning system.
      ii) Fixed and Floating zero method. 8M
   (OR)

1 of 2

6. a) What are the basic components of NC system and explain the function of each component? **6M**

   b) Write a part program for the component shown in figure 6 (b) below :
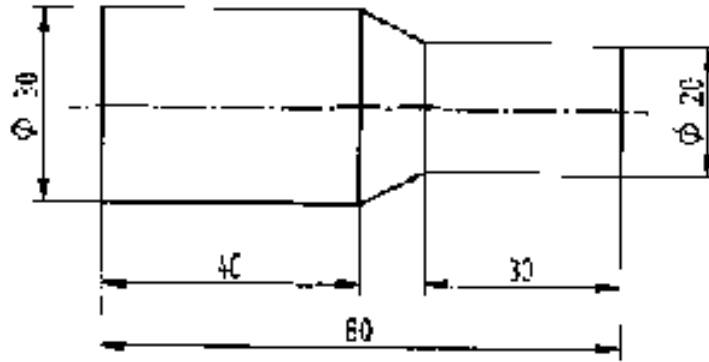

Fig 6(b)

8M

Work material : mild steel
Work size : 32 mm dia
Length : 90 mm
Speed : 800 r.p.m.
Feed : 200 mm/min
Depth of cut : 2 mm
Assume other data.

UNIT-IV

7. a) What is meant by a part family in Group Technology? Name and explain three **8M**
   parts classification and coding systems commonly used in GT.

   b) Explain machine cell design in group technology. **6M**

(OR)

8. a) Explain about the OPITZ coding system generally used in Group Technology **7M**

   b) Describe retrieval type CAPP systems? List out the merits and demerits of each type. **7M**

UNIT-V

9. a) What are the Benefits and Applications of FMS? **6M**

   b) Explain in detail the layouts of FMS. **8M**

(OR)

10. a) Define FMS and describe under what circumstances it can be applied in manufacturing. Identify some of the advantages of a typical FMS. **8M**

    b) What are the functions of material handling and storage systems? **6M**

****

AR16

CODE: 16EC3021   SET-1

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021
DIGITAL SIGNAL PROCESSING
(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) Define various elementary discrete time signals. Write notes on them and explain about their properties.   7M
   b) Check whether the given system is   7M
      i). $y(n)= x(2n)$ static or dynamic
      ii). $y(n)= x(n) +(1/x(n-1))$ Causal or Non Causal.
      iii). $y(n) =x^2(n)$ Linear or non linear
      iv). $y(n)= x(n/2)$ Time variant or Time Invariant
   (OR)
2. a) Define causality and stability of an LTI system and state the conditions for stability.   7M
   b) Prove any three properties of Z-Transform.   7M

UNIT-II

3. a) State and prove circular convolution property of DFT in frequency domain   7M
   b) Find the DFT of the sequence $x(n)=\{1,2,3,4,4,3,2,1\}$ using DIT-FFT algorithm   7M
   (OR)
4. a) Find the Discrete Fourier Series of the sequence $x(n) = \{1, 1, 0, 0\}$. And also draw the amplitude and phase spectrum   7M
   b) Draw the radix 2 DIF-FFT structure when N=16.   7M

UNIT-III

5. a) Find the digital network in direct form-I and II for the system described by the difference equation,   6M

   $y(n)= x(n)+0.3x(n-1)-0.4x(n-2)-0.8y(n-1)+0.7y(n-2)$

   b) Design a Chebyshev filter with a maximum pass band attenuation of 2.5dB at $\Omega p=20$ rad/sec and stop band attenuation of 30 dB at $\Omega s= 50$ rad/sec   8M
   (OR)

6. a) Obtain the Direct form – I realization described by difference equation y(n)= 2y(n-1) + 3y(n-2)+x(n) + 2x(n-1) + 3x(n-2) **7M**

   b) Convert the analog filter with transfer function $H_a(s)= s+0.1/(s+0.1)^2+9$ into digital filter for T=1s using impulse invariant transformation. **7M**

UNIT-IV

7. Design a filter with **14M**

$$H_d(e^{j\omega}) = e^{-j3\omega} \quad for -\frac{\pi}{4} \le \omega \le \frac{\pi}{4}$$

$$= 0 \quad for \ \frac{\pi}{4} \le \omega \le \pi$$

   Using a Hanning window with N=11 find the values of h(n) and H(z) and also plot the magnitude response

(OR)

8. a) A band pass filter is to be designed, with cut-off frequencies at 0.2 rad/sec and 0.3 rad/sec. The filter order is N=7. Use a Hanning window function. Determine the frequency response **7M**

   b) Realize the following system with minimum number of multipliers H(z)= **7M**
   $$\frac{1}{4} + \frac{1}{2}z^{-1} + \frac{3}{4}z^{-2} + \frac{1}{2}z^{-3} + \frac{1}{4}z^{-4}$$

UNIT-V

9. a) Explain the architecture of TMS320C5X DSP Processor with block diagram **7M**

   b) Describe the multiplier/adder unit of TMS320c5xx processor with a neat block diagram. **7M**

(OR)

10. a) Explain the various pipeline programming models that are adapted in DSP processors **7M**

    b) Explain addressing modes of TMS320c5xx processor. **7M**

AR16

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, February-2021

SOFTWARE TESTING AND PROJECT MANAGEMENT

(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)	Explain briefly about structured approach to testing	7M
	b)	Describe about the Economics of System Development Life Cycle (SDLC)	7M
		(OR)	
2.	a)	Discuss about functional and structural testing.	7M
	b)	Explain briefly about eight considerations in developing testing methodologies	7M

UNIT-II

3.	a)	Explain briefly about Black-Box Testing.	7M
	b)	Explain briefly about White-Box-Testing.	7M
		(OR)	
4.	a)	Discuss in detail about Load Runner and Win runner.	7M
	b)	Discuss briefly about Silk test and Java Testing Tools	7M

UNIT-III

5.		Explain in detail about Testing Process.	14M
		(OR)	
6.	a)	What are the Applications of Client/Server Testing	8M
	b)	Explain in detail about Testing a Data Warehouse	6M

UNIT-IV

7.		Explain Waterfall Model in detail.	14M
		(OR)	
8.	a)	Explain about Software Economics.	10M
	b)	Discuss briefly about Pragmatic software cost estimation.	4M

UNIT-V

9.	a)	Explain briefly about Reducing Software Product Size.	7M
	b)	Explain briefly about Improving Software Processes.	7M
		(OR)	
10.	a)	Discuss any 10 principles of Conventional Software Engineering.	7M
	b)	Discuss the principles of Modern Software Management	7M

***

AR13

CODE: 13CE3017   SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021

GEOTECHNICAL ENGINEERING-II
(Civil Engineering)

Time: 3 Hours   Max Marks: 70

PART-A

ANSWER ALL QUESTIONS   [1 x 10 = 10 M]

1. a) Definition of Soil Exploration?
    b) What are the common methods of advancing bore holes?
    c) Investigation of the stability of finite slopes what are the involving steps?
    d) Distinguish between 'active' and 'passive' earth pressure.
    e) What are factors affecting bearing capacity?
    f) How do you determine the group efficiency of piles?
    g) What is percussion drilling?
    h) Write the Taylor's stability number ?
    i) Write a note on types of failures in shallow foundations.
    j) Write the The Engineering News Formula

PART-B

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

UNIT-I

2. a) Explain the terms 'inside clearance' and 'outside clearance' as applied to a sampler. Why are they provided?   6
    b) Compute the area ratio of a thin walled tube samples having an external Diameter of 6 cm and a wall thickness of 2.25 mm. Do you recommend the sampler for obtaining undistributed soil samples?   6

(OR)

3. a) Describe with a neat sketch how will you carry out the wash boring method of soil exploration. What are its merits and demerits?   6
    b) A SPT is conducted in fines and below water table and a value of 25 is obtained for N. What is the corrected value of N?   6

UNIT-II

4. a) With neat sketch, Explain different types of slope failures.   6
    b) An embankment is inclined at an angle of 35° and its height is 15 m. The angle of shearing resistance is 15° and the cohesion intercept is 200 kN/m2. The unit weight of soil is 18.0 kN/m3. If Taylor's stability number is 0.06, find the factor of safety with respect to cohesion.   6

(OR)

5. a) Explain swedish slip circle method for cohesive frictional soil.   6
    b) A cutting is to be made in clay for which the cohesion is 35 kN/m2 and $\varphi = 0°$. The density of the soil is 20 kN/m3. Find the maximum depth for a cutting of side slope 11/2 to 1 if the factor of safety is to be 1.5. Take the stability number for a 1 1/2 to 1 slope and $\varphi = 0°$ as 0.17.   6

6. a) Differentiate critically between Rankine and Coulomb theories of earth pressure — 6

   b) A retaining wall, 6 m high, retains dry sand with an angle of friction of 30° and unit weight of 16.2 kN/m3. Determine the earth pressure at rest. If the water table rises to the top of the wall, determine the increase in the thrust on the wall. Assume the submerged unit weight of sand as 10 kN/m3. — 6

(OR)

7. a) Describe the wedge theory for determining active earth pressure and evaluate the assumptions. — 6

   b) What are the limiting values of the lateral earth pressure at a depth of 3 metres in a uniform sand fill with a unit weight of 20 kN/m3 and a friction angle of 35°? The ground surface is level. — 6

UNIT-IV

8. a) Bring out clearly the effect of ground water table on the safe bearing cpacity. — 6

   b) A continuous footing of width 2.5 m rests 1.5 m below the ground surface in clay. The unconfined compressive strength of the clay is 150 kN/m2. Calculate the ultimate bearing capacity of the footing. Assume unit weight of soil is 16 kN/m3. — 6

(OR)

9. a) What are the criteria for deciding the depth of foundations? Write brief critical notes on tolerable settlements for buildings. — 6

   b) Compute the safe bearing capacity of a continuous footing 1.8 m wide, and located at a depth of 1.2 m below ground level in a soil with unit weight $\gamma = 20$ kN/m3, $c = 20$ kN/m2, and $\varphi = 20°$. Assume a factor of safety of 2.5. Terzaghi's bearing capacity factors for $\varphi = 20°$ are $Nc = 17.7$, $Nq = 7.4$, and $N\gamma = 5.0$, what is the permissible load per metre run of the footing? — 6

UNIT-V

10. a) What are the advantages and disadvantages of Driven piles? — 6

    b) A group of 16 piles of 50 cm diameter is arranged with a centre to centre spacing of 1.0 m. The piles are 9 m long and are embedded in soft clay with cohesion 30 kN/m2. Bearing resistance may be neglected for the piles— Adhesion factor is 0.6. Determine the ultimate load capacity of the pile group. — 6

(OR)

11. a) List various types of pile foundations. What are the conditions where a pile foundation is more suitable than a shallow foundation? — 6

    b) A timber pile was driven by a drop hammer weighing 30 kN with a free fall of 1.2 m. The average penetration of the last few blows was 5 mm. What is the capacity of the pile according to Engineering News Formula? — 6

CODE: 13EE3018   **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021

POWER ELECTRONICS
(Electrical and Electronics Engineering)

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

PART-A
ANSWER ALL QUESTIONS   **[1 x 10 = 10 M]**

1. a) Define the holding current of thyristor?
    b) How to get di/dt protection of an SCR?
    c) Draw the bridge type full converter circuit?
    d) Give at least two applications of phase controlled rectifiers?
    e) What is the average output voltage of a three-phase semi converter for continuous load current?
    f) Draw the step-down chopper circuit?
    g) Draw the circuit for basic series inverter?
    h) Define turnoff times for an SCR?
    i) What is the type of commutation in step up cyclo converter?
    j) What is string efficiency?

PART-B
Answer one question from each unit   **[5x12=60M]**
UNIT-I

2. a) Explain the two transistor model of a thyristor?   6M
    b) Draw the equivalent circuit of a UJT and explain its working.   6M
                              (OR)
3. a) Draw and explain the static characteristics of SCR?   6M
    b) Describe class-C type of commutation used for thyristors with current and   6M
        voltage waveforms

UNIT-II

4. a) Explain the operation of single phase half controlled rectifier with R-L load.   6M
        Draw the relevant waveforms and derive the expression for average load
        voltage.
    b) A single phase full converter feeds power to RLE load with R=6Ω, L=6mH   6M
        and E=60v. the ac source voltage is 230v,50Hz, for continuous conduction,
        find the average value of load current for a firing angle delay of 50°
                              (OR)
5. a) Explain the operation of single phase, full bridge converter with R-L load.   6M
        Draw the relevant waveforms and derive the expression for a average
        load voltage.
    b) Explain the effect of source impedance on the performance of 1 phase full   6M
        converter indicating clearly the conduction of various thyristors during one
        cycle

UNIT-III

6. a) Explain the operation of 3-φ half controlled bridge converter with RL-load. Draw the relevant wave forms and derive the expression for average load voltage for firing angle $\alpha \geq 60^0$ 6M

   b) A 3phase full converter charges a battery from a 3phase supply of 230v, 50Hz. The battery emf is 200V and its internal resistance is 0.5ohm.compute the firing angle delay and the supply power factor , assume charging current is constant.   6M

(OR)

7. a) Derive the average output voltage for a 3phase full converter to a R load, for $\alpha < 60$, $\alpha \geq 60^0$ 6M

   b) Draw the circuit for practical dual converter and explain the operation?   6M

UNIT-IV

8. a) Explain the operation of 1-φ full wave ac voltage controller with RL load. Draw the relevant waveforms and derive the expression for rms value of load voltage   6M

   b) Explain the modes of operation of triac?   6M

(OR)

9. a) Discuss the working of a single phase midpoint cyclo-converter with RL-loads and for discontinuous operation with neat circuit diagram and output voltage and current waveforms for fo=1/4fs.   12M

UNIT-V

10. a) Explain the expression for output voltage in case of step-down chopper .Draw the circuit diagram and relevant waveforms   6M

    b) A step-up chopper has input voltage of 220V and output voltage of 660V.If the conducting Time of thyristor –chopper is 100μsec, compute the pulse width of output voltage. In Case output voltage pulse width is halved for constant frequency operation, find the average value of new output voltage   6M

(OR)

11. a) Explain the principle of operation of half bridge series inverter with the help of circuit diagram and necessary waveforms.   6M

    b) What are the different pulse width modulation techniques used for inverters?   6M

2 of 2
***

AR13

CODE: 13EC3020   SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021

DIGITAL SIGNAL PROCESSING
(Electronics & Communication Engineering)

Time: 3 Hours   Max Marks: 70

PART-A

ANSWER ALL QUESTIONS   [1 x 10 = 10 M]

1. a) Test the stability of the system whose impulse response $h(n)=\left(\frac{1}{2}\right)^{n}u(n)$

    b) Describe causal system
    c) Explain the convolution property of z-transform.
    d) What is FFT?
    e) What are the properties of Chebyshev filter.
    f) How one can design digital filters from analog filters.
    g) What is meant by upsampling.
    h) What are the properties of FIR filter.
    i) Describe bit-reversed addressing.
    j) List status register bits of 5X and their functions

PART-B

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

UNIT-I

1. a) Define various elementary discrete time signals. Write notes on them and explain   6M
       about their properties.
    b) Check whether the given system is   6M
          i).y(n)= x(2n)   static or dynamic
          ii).y(n)= x(n) +(1/x(n-1)) Causal or Non Causal.
          iii).y(n) =x^{2}(n) Linear or non linear
          iv).y(n)= x(n/2) Time variant or Time Invariant
                                  (OR)
2. a) Define causality and stability of an LTI system and state the conditions for   6M
       stability.
    b) Prove any three properties of Z-Transform.   6M

UNIT-II

3. a) State and prove circular convolution property of DFT in frequency domain   6M
    b) Find the DFT of the sequence x(n)={1,2,3,4,4,3,2,1} using   6M
         DIT-FFT algorithm
                                  (OR)
4. a) Find the Discrete Fourier Series of the sequence x(n) = {1, 1, 0, 0}. And also draw   6M
       the amplitude and phase spectrum
    b) Draw the radix 2 DIF-FFT structure when N=16.   6M

UNIT-III

5. a) Find the digital network in direct form-I and II for the system described by the difference equation,   **4M**

   y(n)= x(n)+0.3x(n-1)-0.4x(n-2)-0.8y(n-1)+0.7y(n-2)

   b) Design a Chebyshev filter with a maximum pass band attenuation of 2.5dB at $\Omega p=20$ rad/sec and stop band attenuation of 30 dB at $\Omega s= 50$ rad/sec   **8M**

(OR)

6. a) Obtain the Direct form – I realization described by difference equation y(n)= 2y(n-1) + 3y(n-2)+x(n) + 2x(n-1) + 3x(n-2)   **6M**

   b) Convert the analog filter with transfer function $H_a(s)= s+0.1/(s+0.1)^2+9$ into digital filter for T=1s using impulse invariant transformation.   **6M**

UNIT-IV

7. Design a filter with   **12M**

$$H_d(e^{j\omega}) = e^{-j3\omega} \quad for -\frac{\pi}{4} \le \omega \le \frac{\pi}{4}$$

$$= 0 \quad for \ \frac{\pi}{4} \le \omega \le \pi$$

   Using a Hanning window with N=11 find the values of h(n) and H(z) and also plot the magnitude response

(OR)

8. a) A band pass filter is to be designed, with cut-off frequencies at 0.2 rad/sec and 0.3 rad/sec. The filter order is N=7. Use a Hanning window function.Determine the frequency response   **6M**

   b) Realize the following system with minimum number of multipliers   H(z)=   **6M**
   $$\frac{1}{4}+\frac{1}{2}z^{-1}+\frac{3}{4}z^{-2}+\frac{1}{2}z^{-3}+\frac{1}{4}z^{-4}$$

UNIT-V

9. a) Explain the architecture of TMS320C5X DSP Processor with block diagram   **6M**

   b) Describe the multiplier/adder unit of TMS320c5xx processor with a neat block diagram.   **6M**

(OR)

10. a) Explain the various pipeline programming models that are adapted in DSP processors   **6M**

    b) Explain addressing modes of TMS320c5xx processor.   **6M**

AR13

CODE: 13CS3024   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, February-2021

SOFTWARE PROJECT MANAGEMENT
(Computer Science & Engineering)

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

<u>**PART-A**</u>

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

1. a) Why ROI is important?
    b) Define Stakeholders.
    c) Mention about late risk resolution
    d) How to improve software team effectiveness.
    e) Give the importance of Gantt Charts.
    f) What is the key role of Business Analyst?
    g) What is use of PERT?
    h) Define Periodic Status Assessment
    i) What are the obstacles to decision making?
    j) What are Process metrics?

<u>**PART-B**</u>

Answer one question from each unit   **[5x12=60M]**
<u>**UNIT-I**</u>

2. a) Discuss about the drawbacks of waterfall model.   6M
    b) Explain about the five basic parameters that influence software cost.   6M
                                        (OR)
3. a) What are the Principles of Modern Software Management? Explain   6M
    b) Explain few problems associated with Software projects   6M

<u>**UNIT-II**</u>

4. a) What are the modern process approaches for solving conventional   6M
        problems?
    b) Discuss about the process of reducing software product size.   6M
                                        (OR)
5. a)   Explain about improving automation through software environments.   6M
    b) What are the skills required for Project manager? Explain   6M

<u>**UNIT-III**</u>

6. a) Describe about the life-cycle phases of Unified Software Management   6M
        Process Framework.
    b) Write short notes on(i) Management Artifacts (ii) Engineering Artifacts   6M
                                        (OR)

7. a) Discuss about model based architecture in technical perspective. 6M
   b) Explain the Checkpoints of the Process in detail. 6M

UNIT-IV

8. a) Explain process planning guidelines. 6M
   b) Discuss about the cost and schedule estimating process. 6M
   (OR)
9. a) Explain about evolutionary work breakdown structures. 6M
   b) What do you mean by Process Automation? Explain 6M

UNIT-V

10. a) Describe about pragmatic Software Metrics. 6M
    b) What are the seven core metrics in managing a modern process? Discuss 6M
    (OR)
11. a) Explain metrics automation. 6M
    b) Give a common subsystem overview of CCPDS-R 6M

***