

AR18

CODE: 18HST302

SET-2

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

III B.Tech II Semester Supplementary Examinations, September-2022

**HUMAN VALUES
(Common to CE, CSE & IT)**

Time: 3 Hours

Max Marks: 60

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 a note on Self-Exploration with examples 6M
b) Differentiate between Continuous Happiness and Prosperity Morals 6M
(OR)
2. a) Critically analyse the nature of Value time and Cooperation with examples 6M
b) Define Spirituality? Explain the importance of Spirituality 6M

UNIT-II

3. a) Critically analyse the role of Harmony in Myself? 6M
b) Discuss the importance of material 'Body' 6M
(OR)
4. a) Differentiate between Harmony and Human Being with example 6M
b) Define needs of Self ('I')? Explain with real time examples. 6M

UNIT-III

5. a) Define harmony in the Family? Discuss the nature of harmony in the Family. 6M
b) What do you mean by human interaction? Explain the importance of human interaction 6M
(OR)
6. a) Explain the difference between Trust and Respect with help of real time examples. 6M
b) Differentiate between respect and differentiation in your own words. 6M

UNIT-IV

7. a) What do you mean by nature? Explain the different order of nature. 6M
b) Describe Interconnectedness in your own words? 6M
(OR)
8. a) Define nature recyclability? Explain various types of nature recyclability 6M
b) Briefly explain about the Holistic perception of harmony with suitable examples 6M

UNIT-V

9. a) Explain the importance of Natural acceptance of human values in your own words 6M
b) Briefly explain about the Ethical Human Conduct with real time examples 6M
(OR)
10. a) Differentiate between Humanistic Constitution and Humanistic Universal Order 6M
b) Critically analyse the implications of the Holistic understanding of Harmony 6M

SWITCHGEAR AND PROTECTION**(Electrical and Electronics Engineering)****Time: 3 Hours****Max Marks: 60**

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 the importance of resistance switching and current chopping in circuit breaker. 6M
b) Explain the principle of operation of air blast circuit breaker with neat diagram. 6M
- (OR)
2. a) Distinguish clearly between the recovery voltage and restriking voltage and explain the significance of RRRV in the operation of a circuit breaker. 6M
b) Describe the construction, principle of operation and applications of SF6 circuit breaker. 6M

UNIT-II

3. a) Explain with a neat sketch, the operation of an induction type over current relay. 6M
b) Explain the operation of distance relay in detail. 6M
- (OR)
4. a) Explain the operation of static instantaneous over current relay. 6M
b) Compare static relays with electromagnetic relays in detail. 6M

UNIT-III

5. a) Develop the protection scheme of generator against rotor fault and inter turn fault. 6M
b) Explain the restricted earth fault protection by differential system in the protection of a alternator winding? 6M
- (OR)
6. a) Explain how the transformer is protected with Buchholz relay. 6M
b) A 11 kV, 150 MVA alternator is grounded through a resistance of 12 ohms. The current transformers have a ratio of 1000/5. The relay is set to operate when there is an out of balance current of 0.5 A. Find the percentage of generator winding protected by percentage differential protection? 6M

UNIT-IV

7. a) Explain the differential protection for bus bars. 6M
b) Classify differential protection scheme to the feeder and bus bar with neat diagram. 6M
- (OR)
8. a) Explain principle of translay relay protection scheme. 6M
b) Explain Three- zone distance relay protection using Impedance relays 6M

UNIT-V

9. a) Describe the construction, principle of operation and application of rod gap arrester. 6M
b) Explain in detail about the internal causes of over voltages due to lightning. 6M
- (OR)
10. a) What are the different types of grounding? Explain the reactance grounding. 6M
b) Explain the zinc-oxide lightning arrester with neat diagram. 6M

**CAD/CAM
(Mechanical Engineering)****Time: 3 Hours****Max Marks: 60**

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

UNIT-I

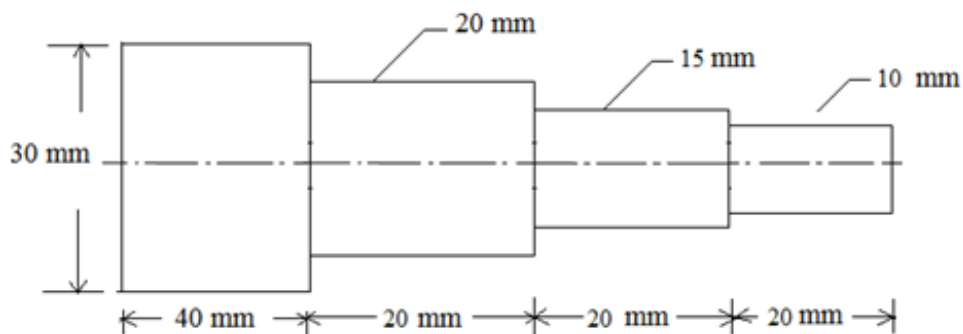
1. a) Differentiate between working coordinate system and screen coordinate system. 4M
 - b) Perform a 30° rotation of the triangle A (0,0), B (1,2), C (5,2) 8M
i) about origin ii) about point P(-1,-2).
- (OR)**
2. a) Explain product life cycle overlaid with CAD/CAM. 6M
 - b) Construct a 2D transformation matrix in homogeneous coordinates of the given sequence. 6M
a) Rotation around the origin by 75° b) Translate by (-3,5)

UNIT-II

3. a) Distinguish between synthetic and analytical curves and mention the characteristics of Bezier curve. 6M
 - b) Compare surface modeling with wire frame modeling. 6M
- (OR)**
4. a) What are the various types of surfaces? Briefly explain them with neat diagrams. 6M
 - b) Compare B-rep and CSG technique in solid modeling. 6M

UNIT-III

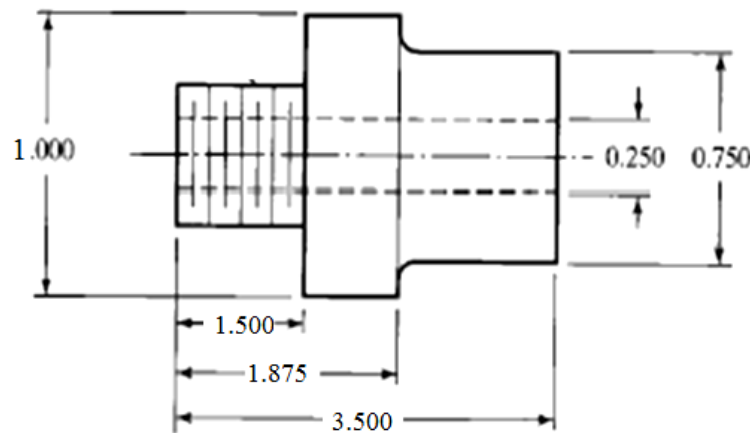
5. a) Discuss about various types of NC control systems. 6M
 - b) Enlist various applications of NC. 6M
- (OR)**
6. a) Prepare CNC Part Programming for the following Stepped bar shown in below figure. 6M



- b) Discuss in brief about NC part programming methods. 6M

UNIT-IV

7. a) Explain in brief about MICLASS Coding System used in Group Technology. 6M
- b) Develop the Form Code using OPITZ Coding System for the part illustrated in Figure below. 6M



(OR)

8. a) Discuss in brief about Generative Approach in CAPP. 6M
- b) Apply the Rank Order Clustering technique to the machine-part incidence matrix in the following table to identify logical part families and machine groups. Parts are identified by letters, and machines are identified numerically. 6M

Machines	Parts					
	A	B	C	D	E	F
1	1	0	0	0	1	0
2	0	0	0	1	0	1
3	1	1	0	0	0	0
4	0	0	1	1	0	0
5	0	1	0	0	1	0
6	0	0	1	1	0	1

UNIT-V

9. a) Discuss various functions of material handling and storage systems in FMS. 6M
- b) Explain Ladder Layout configuration with a neat sketch. 6M
- (OR)
10. a) Enlist about applications and benefits of FMS. 6M
- b) Explain Openfield Layout configuration with a neat sketch. 6M

AR16

CODE: 16CE3019

SET-1

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

III B.Tech II Semester Supplementary Examinations, September-2022

PRE-STRESSED CONCRETE

(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 the Freyssinet system with a neat sketch. 7M
b) Explain “Hoyer’s long line system” of pretensioning with a neat sketch. 7M
- (OR)
2. a) Distinguish between pre-tensioning and post-tensioning 7M
b) What is the need for high strength steel and concrete in prestressed concrete? 7M

UNIT-II

3. a) Explain the loss of prestress 7M
b) A concrete beam of 10 m span, 100 mm wide and 300 mm deep is prestressed by 3 7M
cables. The area of each cable is 200 mm^2 and the initial stress in the cable is 1200 N/mm^2 . Cable 1 is parabolic with an eccentricity of 50 mm above the centroid at the supports and 50 mm below at the centre of span. Cable 2 is also parabolic with zero eccentricity at supports and 50 mm below the centroid at the centre of span. Cable 3 is straight with uniform eccentricity of 50 mm below the centroid. If the cables are tensioned from one end only. Estimate the percentage loss of stress in each cable due to friction. Assume $\mu = 0.35$ and $k = 0.0015$ per m.
- (OR)
4. A prestressed concrete beam of section 200 mm wide by 300 mm deep is used over 14M
an effective span of 6 m to support an imposed load of 4 kN/m . The density of concrete is 24 kN/m^3 . (Assume any other missing data) At the centre of span section of the beam, find the magnitude of:
(a) The concentric prestressing force necessary for zero fibre - stress at the soffit when the beam is fully loaded; and
(b) The eccentric prestressing force located 100 mm from the bottom of the beam which would nullify the bottom fibre stresses due to loading.

UNIT-III

5. A PSC beam of effective span 16m is of rectangular section 400mm wide and 1200mm deep. A tendon consists of 3300 mm^2 of strands of characteristic strength 1700 N/mm^2 with an effective prestress of 910 N/mm^2 . The strands are located 870mm from the top face of the beam. If $f_{cu} = 60 \text{ N/mm}^2$, estimate the flexural strength of the section as per IS1343 provisions for the following cases: (i) Bonded tendons (ii) Unbonded tendons 14M

(OR)

6. a) Explain the terms 6M
 i) End Block. ii) Anchorage Zone
 iii) Bursting tension with reference to Post- tensioned Prestressed members
 b) What are the various methods generally used for the investigation of anchorage zone stress 8M

UNIT-IV

7. The cross-section of a composite beam consists of a 300mm x 900mm precast stem and cast-in-situ flange 900mm x 150mm. The stem is a post-tensioned unit with an initial prestressing force of 2500 kN. The effective prestress available after making deduction for losses is 2200 kN. The dead load moment at mid span due to the weight of the precast section is 250 kNm. The dead load moment due to the weight of the flange is 125 kNm. After hardening of the flange concrete, the composite section has to carry a live load which produces a bending moment of 700 kNm. Examine the stress distribution in concrete at the various stages of the loading. 14M

(OR)

8. A Composite T beam is made up of a pre tensioned rib 100mm wide and 200mm deep and a cast in situ slab 400mm wide and 40 mm thick having a modulus of elasticity of 28 KN/mm². If the differential shrinkage is 100 X 10⁻⁶units. Determine the shrinkage stresses developed in the precast and cast insitu units. 14M

UNIT-V

9. A Prestressed concrete beam having a cross sectional area of 5x10⁴mm² is simply supported over a span of 10 m. It supports a uniformly distributed imposed load of 3kN/m, half of which is non- permanent. The tendon follows a trapezoidal profile with an eccentricity of 100 mm within the middle – third of the span and varies linearly from the third – span points to zero at supports. The area of tendon A_p = 350mm² have effective prestress of 1290 N/mm² immediately after transfer using the flowing data, calculate the short term and long term deflections. I=4.5x10⁸mm⁴; E_c = 34 kN/ mm²; A = 5x10⁴mm²; E_s = 200 kN/ mm²; Density of concrete = 23.6 kN/ m³; Creep coefficient = 2; Concrete shrinkage = 450 x 10⁻⁶; Relaxation of steel stress = 10% 14M

(OR)

10. A PSC beam with rectangular section, 150mm wide and 300mm deep is prestressed by three cables each carrying an effective prestress of 200kN. The span of the beam is 12m. The first cable is parabolic with an eccentricity of 50mm below the centroidal axis at the centre of the span and 50mm above the centroidal axis at the supports. The second cable is parabolic with an eccentricity of 50mm at the centre of the span and zero eccentricity at the supports. The third cable is straight with an eccentricity of 50mm below the centroidal axis. If the beam supports an UDL of 6kN/m and E_c=38kN/mm². Estimate the instantaneous deflection for the following stages 14M
 (i) Prestress + self weight of the beam
 (ii) Prestress + self weight of the beam + live load.

AR13

CODE: 13CS3016

SET-2

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

III B.Tech II Semester Supplementary Examinations, September-2022

WEB TECHNOLOGIES

(Computer Science & Engineering)

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) Write the syntax for displaying image in web page
b) Difference between id and class selectors
c) Define XML schema
d) Write different types of DTD declarations
e) List any 2 interfaces available in javax.servlet.http
f) Write any two differences between get and post methods
g) Write any one advantage of the JSP over servlet
h) Define custom tags in JSP
i) How many parameters are passed to the get Connection()? What are they?
j) List 2 types of drivers in JDBC

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. a) Explain different form components in HTML? 6
b) What is an event? How to handle events in JavaScript? 6

(OR)

3. a) Design simple web page consist of three buttons named with Blue, Red, Green. Upon clicking on these buttons the page will be displayed in the corresponding colors. 6
b) How to create three pop boxes JavaScript? 6

UNIT-II

4. a) Write the advantages of XML schemas over DTDs 4
b) Explain working with Document object model 8

(OR)

5. a) Write the importance of SAX parser in XML 6
b) Explain in brief about XSLT 6

UNIT-III

6. a) Write a servlet for handling init parameters 6
b) Explain about session tracking 6

(OR)

7. Write a servlet for checking the authentication of the user with username and passwords available in cookies 12

UNIT-IV

8. a) Explain about implicit objects in JSP 6
b) Explain about JSP directives 6

(OR)

9. a) Explain how to share data between JSP pages 6
b) Explain how to handle exceptions in JSP 6

UNIT-V

10. a) Explain the steps for connecting database server 6
b) Write a short notes on javax.sql package 6

(OR)

11. Write a JSP to store the details of the username and password entered in HTML form 12