

AR16

CODE: 16CE3016

SET-1

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

III B.Tech II Semester Regular & Supplementary Examinations, October / November 2020

DESIGN AND DRAWING OF STEEL STRUCTURES

(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) A beam MB 350 @ 52.4 kg/m transfers a factored end shear of 200 kN and a factored end moment of 50 kNm to a column HB 300 @ 63 kg/m. Design the connection. Consider $f_y = 250$ MPa and $f_u = 410$ MPa. 10 M
- b) Distinguish between fillet weld subjected to moment acting in the plane of the joint and acting at right angles to the plane of the joints. 4 M
- (OR)**
2. a) Write a short note on high strength friction grip bolts as per IS 800: 2007. 4 M
- b) Write advantages and disadvantages of welded connection. 10 M

UNIT-II

3. Design a laterally unsupported beam for the following data:
Effective span: 4 m, Maximum bending moment = 550 kNm, Maximum shear force = 200 kN, Grade of steel = Fe 410. 14 M
- (OR)**
4. Design a laterally supported beam of effective span 6 m for the following data:
Grade of steel = Fe 410, Maximum bending moment = 150 kNm, Maximum shear force = 210 kN, check for deflection is not required. 14 M

UNIT-III

5. Design a single angle to carry a tension of 150 kN. The end connection is to be done using M20 bolts of product Grade C and property Class 4.6. The yield and ultimate strengths of the steel are 250 MPa and 410 MPa, respectively. 14 M

(OR)

6. Design a built-up of the effective length of 5 m to carry an axial load of 900 kN using battening. Design the connections using fillet welds. The grade of the steel is E250. 14 M

UNIT-IV

7. Write detailed steps of a simply supported gantry girder. 14 M

(OR)

8. Design a suitable gantry girder using rolled I section with a plate connected to the compression flange throughout its length for the following data:
Spacing of columns = 4 m, Crane capacity = 160 kN,
Weight of the crane excluding the crab = 250 kN, Weight of the crab = 60 kN, 14 M
Minimum clearance of cross travel = 0.8 m, Wheel base = 4.2 m,
Centre to centre distance between gantry girders = 20 m,
Height of the rail = 105 mm. Grade of the steel = E250.

UNIT-V

9. Design a welded plate girder 24 m in span and laterally restrained throughout. It has to support a uniform load of 100 kN/m throughout the span exclusive of self-weight. Design the girder without intermediate transverse stiffeners. The steel for the flange and web plates is of grade Fe 410. Design the cross section, the end load bearing stiffener and connections. 14 M

(OR)

10. Design a welded plate girder of 20 m span using the tension field action for the following factored forces: Maximum moment $M_z = 5000$ kNm; Maximum shear force = 900 kN. The girder is laterally restrained. Connections need not to be designed. 14 M

AR16

CODE: 16EE3018

SET-1

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

III B.Tech II Semester Regular & Supplementary Examinations, October / November 2020

POWER SYSTEM ANALYSIS

(Electrical and Electronics Engineering)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

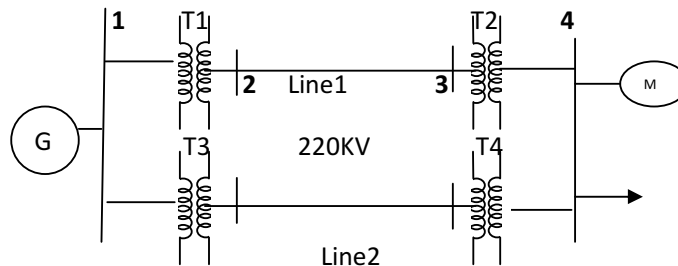
All parts of the Question must be answered at one place

UNIT-I

1. a) Discuss about the significance of per unit system. 6M
- b) The one line diagram of a 3-phase power system is shown in figure. Draw the reactance diagram with all impedances including the load impedance marked in per unit. Select a common base of 100MVA and 22kV on the generator side. 8M

G : 90MVA 22kV $x=18\%$
T1: 50MVA 22/220kV $x=10\%$
T2: 40MVA 220/11kV $x=6\%$
T3: 40MVA 22/110kV $x=6.4\%$
T4: 40MVA 110/11kV $x=8\%$
M: 66.5MVA 10.45kV $x=18.5\%$

Lines 1 and 2 have reactances of 48.4Ω and 65.43Ω respectively. The three phase load at bus 4 absorbs 57MVA at 0.6pf lag at 10.45kV.



(OR)

2. a) Drive bus admittance and bus impedance matrices by using direct method. 7M
- b) Prove that: 7M

$$Z_{pu(new)} = Z_{pu(old)} \times \frac{MVA_{BASE(new)}}{MVA_{BASE(old)}} \times \frac{(KV)_{BASE(old)}^2}{(KV)_{BASE(new)}^2}$$

UNIT-II

3. a) Derive the basic equations for load flow studies and also write the assumptions and approximations to get the simple equations. 7M
- b) What is fast decouple load flow? Mention the advantages of such load flow solution. 7M

(OR)

4. a) Explain clearly algorithmic steps for solving load flow equations using Newton-Raphson method(polar form) when the system contains all type of buses. 7M
- b) Compare the advantages and disadvantages of Gauss-Seidel and Newton-Raphson methods. 7M

UNIT-III

5. Write step-by-step algorithm for a Z_{bus} building for a network containing no mutuals and no phase shifting transformers. 14M

(OR)

6. a) What is symmetrical short circuit MVA? Explain the procedure of calculating symmetrical fault current stating the assumptions. 6M
- b) A 1250kVA, 5000V generator having sub-transient reactance of 0.08 p.u supplies a purely resistive load of 1000KW at rated voltage. The load is connected directly across the terminals of the generator. If all the three phases of the load are short circuited simultaneously, find the initial symmetrical short circuit current in the generator. 8M

UNIT-IV

7. a) With the help of relevant expressions, obtain the interconnection of sequence networks for a L-G fault in Alternator with fault impedance Z_f . 7M
- b) A 100MVA, 11kV Synchronous Generator has positive, negative and zero sequence reactances of 15%, 10% and 6% respectively. The generator neutral is grounded through a reactance of 4%. A Double line to Ground fault occurs at the generator terminals. Determine fault current. Assume that the generator is unloaded before fault. 7M

(OR)

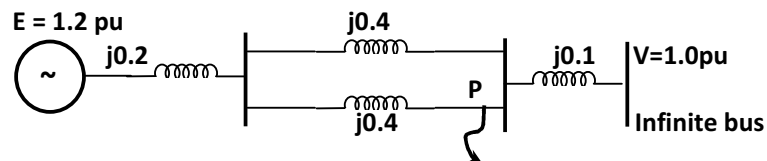
8. a) A generator of negligible resistance having 1 p.u. voltage behind transient reactance is subjected to different types of faults. 8M

Type of fault	Resulting fault current in pu
3 - phase	3.33
L - L	2.23
L - G	3.01

- Calculate the per unit value of three sequence reactances.
- b) Draw the zero sequence reactance diagram of different combination of Star-Delta transformer banks. 6M

UNIT-V

9. a) What is equal area criterion? Explain any two applications of equal area criterion to assess the transient stability of Single machine system. 8M
- b) For the system shown in Fig., a 3-phase fault is applied at point P. Find the critical clearing angle for clearing the fault. The generator is delivering 1.0 PU power during pre-fault condition. 6M



(OR)

10. a) Derive swing equation of a single machine connected to infinite bus bar. 10M
- b) Explain various methods of improving steady state stability. 4M

AR16

CODE: 16ME3018

SET-1

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

III B.Tech II Semester Regular & Supplementary Examinations, October / November 2020

DESIGN OF MACHINE MEMBERS – II

(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) Derive the expression for LAME's Equation to determine cylinder wall thickness? 7M
- b) The inner diameter of a cylindrical tank for liquefied gas is 250 mm. The gas pressure is limited to 15 MPa. The tank is made of plain carbon steel 10C4 ($S_{ut}=340 \text{ N/mm}^2$ and $\mu=0.27$) and the factor of safety is 5. Calculate the cylinder wall thickness. 7M

(OR)

2. Design a cast iron piston for a single acting four stroke engine developing 75 kW per cylinder when running at 600 r.p.m. The other available data is as follows: Maximum gas pressure = 4.8 N/mm^2 ; Indicated mean effective pressure = 0.65 N/mm^2 ; Mechanical efficiency = 95%; Radius of crank = 110 mm; Fuel consumption = 0.3 kg/BP/hr; Calorific value of fuel (higher) = $44 \times 103 \text{ kJ/kg}$; Difference of temperatures at the centre and edges of the piston head = 200°C ; Allowable stress for the material of the piston = 33.5 MPa; Allowable stress for the material of the piston rings and gudgeon pin = 80 MPa; Allowable bearing pressure on the piston barrel = 0.4 N/mm^2 and allowable bearing pressure on the gudgeon pin = 17 N/mm^2 . 14M

UNIT-II

3. The following particulars refer to a four stroke cycle diesel engine: Cylinder bore = 150 mm; Stroke = 187.5 mm; R.P.M. = 1200; Maximum gas pressure = 5.6 N/mm^2 ; Mass of reciprocating parts = 1.75 kg. Find 14M
 1. The dimensions of an I-section connecting rod of forged steel with an elastic limit compressive stress of 350 MPa. The ratio of the length of connecting rod to the length of crank is 4 and the factor of safety may be taken as 5;
 2. The wrist pin and crankpin dimensions on the basis of bearing pressures of 10 N/mm^2 and 6.5 N/mm^2 of the projected area respectively; and
 3. The dimensions of the small and big ends of the connecting rods, including the size of the securing bolts of the crankpin end. Assume that the allowable stress in the bolts, is not to exceed 35 N/mm^2 .Draw dimensioned sketches of the connecting rod showing the provisions for lubrication.

(OR)

4. Design a side crankshaft for a 500 mm \times 600 mm gas engine. The weight of the flywheel is 80 kN and the explosion pressure is 2.5 N/mm^2 . The gas pressure at maximum torque is 0.9 N/mm^2 when the crank angle is 30° . The connecting rod is 4.5 times the crank radius. Any other data required for the design may be assumed. 14M

UNIT-III

5. a) Derive the expression for length of the cross belt drive? 4M
b) The following data is given for an open-type V-belt drive: diameter of driving pulley = 150 mm diameter of driven pulley = 300 mm centre distance = 1 m groove angle = 40° mass of belt = 0.25 kg/m maximum permissible tension = 750 N coefficient of friction = 0.2. Calculate the maximum power transmitted by the belt and the corresponding belt velocity. Neglect power losses. 10M

(OR)

6. a) What is the polygonal action in roller chain? How will you reduce it? 4M
b) A chain drive consists of a 21 teeth driving sprocket, running at 500 rpm and another 35 teeth driven sprocket. The sprockets are connected by a simple roller chain 06B, which transmits 1 kW of power. Calculate (i) the pitch circle diameters of the driving and driven sprocket wheels; (ii) the chain velocity; (iii) the chain tension; and (iv) the torque on the driven shaft. 10M

UNIT-IV

7. a) Explain design procedure for spur gears. 6M
b) Design a pair of spur gear with 20° full-depth involute teeth consisting of a teeth Pinion meshing with a 50 teeth gear. The pinion shaft is connected to a 22.5 kW, 1450 rpm electric motor. The starting torque of the motor can be taken as 150% of the rated torque. The material of the pinion is plain carbon steel Fe 410 ($S_{ut} = 410 \text{ N/mm}^2$), while the gear is made of grey cast iron FG 200 ($S_{ut} = 200 \text{ N/mm}^2$). The factor of safety is 1.5. 8M

(OR)

8. a) Compare the contact between mating teeth of spur and helical gears. 2M
b) A pair of helical gears are to transmit 15 KW. The teeth are 200 Stub in diametral plane and have a helix angle of 45° . The Pinion runs at 10,000 rpm and has 80 mm pitch diameter. The gear has 320 mm pitch diameter. If the gears are made of cast steel having allowable static strength of 100 MPa, determine a suitable module and face width from static strength considerations & check the gears for wear. Take $\sigma_{es} = 618 \text{ MPa}$. [10M] 12M

UNIT-V

9. A single-row deep groove ball bearing is subjected to a radial force of 8 kN and a thrust force of 3 kN. The shaft rotates at 1200 rpm. The expected life L_{10h} of the bearing is 20 000 h. The minimum acceptable diameter of the shaft is 75 mm. Select a suitable ball bearing for this application. 14M

(OR)

10. a) Explain the following terms with reference to journal bearings: (i) Bearing Characteristic curve (ii) Bearing modulus 4M
b) A ball bearing subjected to a radial load of 4000 N is expected to have a satisfactory life of 12,000 hours at 720 r.p.m. with a reliability of 95%. Calculate the dynamic load carrying capacity of the bearing, so that it can be selected from manufacturer's catalogue based on 90% reliability. If there are four such bearings each with a reliability of 95% in a system, what is the reliability of the complete system? 10M

AR16

CODE: 16EC3019

SET-1

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

III B.Tech II Semester Regular & Supplementary Examinations, October / November 2020

**ANTENNA AND WAVE PROPAGATION
(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) With a neat sketch, explain the principle of radiation mechanism in antennas 7M
 - b) Evaluate the directivity of 7M
 - i. An isotropic source
 - ii. Source with bi-directional $\cos\theta$ power pattern.
- (OR)**
2. Derive the expression for the radiation resistance of half wave dipole and a loop antenna. 14M

UNIT-II

3. a) Prove that maximum of the first minor lobe is 13.46 dB down from the maximum at the major lobe of an N-element linear array. 7M
 - b) Design a linear broad side array consists of 5 elements (point sources) for a total length of λ . Determine Directivity, HPBW and BWFN. 7M
- (OR)**
4. a) Derive the array factor of N- element uniform linear array. 7M
 - b) Describe binomial array and list its merits and demerits. 7M

UNIT-III

5. a) Explain the construction and operation of Rhombic antenna. 7M
- b) Explain Design procedure and its Applications for Yagi- Uda Antenna. 7M

(OR)

- | | | | |
|----|----|---|----|
| 6. | a) | Explain different modes of operation of Helical antenna in detail. | 7M |
| | b) | Explain the need and configuration of a folded dipole antenna. Sketch its radiation pattern and compare its characteristics with that of a simple half wave dipole. | 7M |

UNIT-IV

- | | | | |
|----|----|--|----|
| 7. | a) | Explain the salient and the constructional features of a microstrip antenna. | 7M |
| | b) | Determine the diameter required for a parabolic reflector if the directive gain of the 2GHz antenna is to be 30dB. What will be the half power beam width? | 7M |

(OR)

- | | | | |
|----|----|--|-----|
| 8. | a) | Explain the measurement procedure for the measurement of gain and directivity. | 10M |
| | b) | What is aperture blocking and describe how to avoid it with Cassegrain feed mechanism? | 4M |

UNIT-V

- | | | | |
|----|----|---|----|
| 9. | a) | Explain in detail about structure of atmosphere and different modes of propagation. | 7M |
| | b) | Explain briefly about critical frequency, MUF and skip Distance. | 7M |

(OR)

- | | | | |
|-----|----|---|----|
| 10. | a) | What is the radio horizon of a television antenna placed at a height of 166 meters? If the signal is to be received at a distance of 66 KM, what should be the height of receiving antenna? | 7M |
| | b) | Obtain an expression for the Range of propagation in space wave propagation. | 7M |

AR16

CODE: 16CS3016

SET-1

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

III B.Tech II Semester Regular & Supplementary Examinations, October / November 2020

**WEB TECHNOLOGIES
(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) Name different types of lists supported by HTML and explain with examples. 7 M
b) Explain the following tags in detail with example. 7 M
i) Table ii) Form iii) Frame iv) canvas
(OR)
2. a) Explain about different types of cascading style sheets with examples. 7 M
b) Implement the CSS box model with example. 7 M

UNIT-II

3. a) Briefly explain about the following popup boxes in JavaScript with examples. 7 M
i) Alert Box ii) Confirm Box iii) Prompt Box
b) Demonstrate a JavaScript that reads a number and checks whether it is palindrome or not. 7 M
(OR)
4. Explain about AJAX and what are the advantages of AJAX? Create a simple Application using AJAX 14 M

UNIT-III

5. a) Create a XML document to store Student ID, Student Name, Department Name and Student grade details. Create a DTD to validate the document. 7 M
b) Explain XSL application with suitable example. 7 M
(OR)
6. What is DOM? Explain with code, how to parse XML document using DOM? 14 M

UNIT-IV

7. a) Explain about JDBC drivers. 7 M
b) What is a Servlet? Explain Servlet life cycle methods. 7 M
(OR)
8. a) Explain how to use session tracking mechanisms using Servlet API. 7 M
b) Write a simple application in which the HTML form can invoke the servlet. 7 M

UNIT-V

9. a) What are the implicit JSP Objects? 7 M
b) Explain about session tracking in JSP with suitable example. 7 M
(OR)
10. a) Explain about Anatomy of JSP and explain about JSP life cycle. 7 M
b) Write about MVC Architecture. 7 M

RA /AR16

SUB CODE: 16HS3005

SET-1

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

III B.Tech II Semester Regular & Supplementary Examinations, October / November-2020

MANAGERIAL ECONOMICS AND MANAGEMENT SCIENCE
(ECE Branch)

Time: 3 hours

Max Marks: 70M

PART-A

UNIT-I

1. Write and explain about determinants of demand. (14M)
(OR)
2. Explain about different types of elasticity of demand. (14M)

UNIT-II

3. What is economies of scale? Explain about internal and external economies of scale. (14M)
(OR)
4. Define cost. Discuss about different types of costs. (14M)

UNIT-III

5. Explain about monopoly and monopolistic competition with examples. (14M)
(OR)
6. Discuss about price-output determination in case of monopoly. (14M)

UNIT-IV

7. Write and explain about different functions of management. (14M)
(OR)
8. Explain about styles of leadership in detail. (14M)

UNIT-V

9. Discuss in detail about different channels of distribution. (14M)
(OR)
10. What is selection? Explain about selection process in detail. (14M)

AR13

CODE: 13CE3016

SET-1

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

III B.Tech II Semester Supplementary Examinations, October / November 2020

DESIGN OF STEEL STRUCTURES (Civil Engineering)

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) How does ductility affect the strength of a tension member?
b) What is shear – lag?
c) What are the different modes of failures of a plate girder
d) Why are four different buckling curves prescribed to evaluate column strength.

e) For a single unequal angle tie member, the leg preferred for making connection is the
i. Longer one ii. Shorter one
iii. Any of the two iv. Longer if bolted and shorter if welded
f) List some of the important advantages of welding over bolting?
g) What is called beam column?
h) What is the main purpose of a gantry girder?
i) Differentiate between web buckling and web crippling.
j) Where are bearing stiffeners used?

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. a) Write advantages and disadvantages of welded connection. (6M)
b) Write IS code requirements for i) size of weld ii) throat thickness of weld (6M)
iii) Effective length of weld

(OR)

3. An ISLC 300 @ 324.7 N/m (Fe 410 grade of steel) is to carry a factored tensile force of 900 kN. The channel section is to be welded at the site to a gusset plate 12mm thick. Design a fillet weld, if the overlap is limited to 350 mm. (12M)

UNIT-II

4. Design a simply supported beam of 10 m effective span carrying a total factored load of 60 kN/m. The depth of beam should not exceed 500 mm. The compression flange of the beam is laterally supported by floor construction. Assume stiff bearing is 75 mm. (12M)

(OR)

5. An ISMB 500 section is used as a beam over a span of 6 m with simply supported ends. Determine the maximum factored uniformly distributed load that the beam can carry if the ends are restrained against torsion but compression flange is laterally unsupported. (12M)

UNIT-III

6. Design a column of an effective length 6 m. It is subjected to a factored axial compressive load of 1350 kN. Provide two channels back to back connected by welded single lacing. Use steel of grade Fe 410. Design the lacing and also draw the details (12M)

(OR)

7. Design of tension member as per IS800 (12M)

UNIT-IV

8. Design a gantry girder, without lateral restraint along its span, to be used in an industrial building carrying overhead travelling crane for the following data: (12M)
Span of the gantry girder - 6m
Crane capacity - 60 kN
Self-weight of the crane girder excluding trolley – 40 kN
Self-weight of the trolley, electric motor, hook etc. – 10 kN
Minimum hook approach - 1 m
Wheel centres – 3m
Span of crane – 12 m
Yield stress of steel – 250 MPa
Self-weight of rail section – 100 N/m

(OR)

9. a) Draw and detailing of gantry girder with neat sketch. (4M)
b) Explain the steps for design of gantry girder. (8M)

UNIT-V

10. Design a welded plate girder subjected to a maximum factored moment of 3500 kN-m and a factored shear force of 500 kN. Design the plate girder with end bearing stiffener only. Assume ultimate stress as Fe410 and yield stress as Fe250. (12M)

(OR)

11. Design a welded plate girder is subjected to a maximum factored moment of 4000 kN-m and a factored shear force of 600 kN. Find the preliminary section for girder without stiffener. (12M)

AR13

CODE: 13HS3005

SET-1

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

III B.Tech II Semester Supplementary Examinations, October / November 2020

**MANAGERIAL ECONOMICS AND MANAGEMENT SCIENCES
(Common to ECE & EEE)**

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) What are demand determinants
b) Define elasticity of demand
c) Define Isocosts
d) Explicit costs
e) Define market
f) What are types of competition
g) What is theory X
h) What are social responsibilities of management
i) Define job evaluation
j) Define placement

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. Explain demand analysis in detail 12M

(OR)

3. Discuss about various forecasting techniques 12M

UNIT-II

4. a) What are Isoquants 6M
b) Discuss about External Economies of Scale. 6M

(OR)

5. a) Difference between Fixed & Variable costs 6M
b) What are the limitations of BEA 6M

UNIT-III

6. Explain price determination in monopoly Market? 12M

(OR)

7. a) Explain features of perfect competition 6M
b) What is monopolistic competition 6M

UNIT-IV

8. Define Functions of Management with examples 12M

(OR)

9. a) Explain Maslow's Theory of Human Needs 6M
b) What are various Leadership Styles 6M

UNIT-V

10. a) Discuss Functions of Marketing 6M
b) What are Channels of distribution? 6M

(OR)

11. a) Explain Manpower planning 6M
b) Discuss about Recruitment 6M

AR13

CODE: 13ME3018

SET-1

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

III B.Tech II Semester Supplementary Examinations, October / November 2020

**METROLOGY
(Mechanical Engineering)**

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) What do you understand by fits?
b) Write the differences between the unilateral and bilateral system
c) Mention few applications of bevel protractors
d) What is meant by Angle Dekkor?
e) What are the applications of tool makers microscope?
f) What is the significance of Auto collimator.
g) Define the terms roughness, waviness, lay
h) What is a comparator? Classify the different types of comparators
i) What do you mean by error in screw threads?
j) What is purpose of performing alignment test on machine tool?

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. a) A 50 mm diameter shaft and bearing are to be assembled with 6M a clearance fit. The tolerance and allowance are as under.
Allowance = 0.035 mm, Tolerance on hole = 0.025 m,
Tolerance of shaft = 0.017 mm .Find the limits of size for the hole and shaft if
i) Hole basis system is used ii) Shaft basis system is used
b) Explain briefly different types of fits with necessary sketches 6M
- (OR)
3. a) Explain clearly what is meant by selective assembly, when it 6M is used and how it differs from interchangeable assembly?
b) Determine and sketch the limits of tolerance and allowance 6M for a 45mm shaft and hole pair designated H7–d8. The basic size lies in the range of 30-50mm.
The multipliers for grades 7 and 8 are 16 and 25 respectively.
The fundamental deviation for 'd' shaft is (-16 D0.44) microns

UNIT-II

4. a) Explain briefly about optical projector with a neat sketch. 6M
b) State and explain the Taylor's principle of gauge design with neat sketch of Plug gauge and Snap gauges 6M

(OR)

5. a) Explain with neat sketch the working principle of sine bar. 6M
b) Mention the materials used for the manufacture of GO and NOGO gauges. Explain the disposition of tolerance on GO and NO GO gauges by taking reference to work tolerances 6M

UNIT-III

6. a) List the different types of Interferometers and explain about Michelson Interferometer 6M
b) Describe with a neat sketch the principle of working of an auto-collimator. Explain how flatness of the surface is determined with help of an auto-collimator? 6M

(OR)

7. a) With the help of neat sketch explain the working principle of a tool maker's microscope 6M
b) Sketch the optical arrangement of NPL Gauge Interferometer and explain how the relative dispositions of the interference bands are used to compute the length of a slipgauge? 6M

UNIT-IV

8. a) Describe with a neat sketch the construction, principle and operation of Talysurf 6M
b) Compare between electrical comparator and mechanical comparator 6M

(OR)

9. a) Name and describe the various numerical methods of assessment of surface Finish 6M
b) What are the requirements of a good comparator? Explain with the help of a neat sketch how these features are achievable in the "Sigma comparator" 6M

UNIT-V

10. a) With a neat sketch illustrate how the effective diameter of a screw thread may be checked using the three wire method 6M
b) Briefly describe the various alignment tests that can be performed on a Drilling Machine 6M

(OR)

11. a) Explain with a neat sketch of gear tooth profile measurement 6M
b) Explain the types and applications of CMM. 6M

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)****III B.Tech II Semester Supplementary Examinations, October / November 2020****WEB TECHNOLOGIES
(Computer Science & Engineering)****Time: 3 Hours****Max Marks: 70****PART-A****ANSWER ALL QUESTIONS****[1 x 10 = 10 M]**

1. a) Differentiate between GET method and POST method.
- b) List the different objects in java script.
- c) What is DTD?
- d) How to parse the XML files.
- e) What is a web server and web browser?
- f) Define cookie and session.
- g) What is <jsp:forward> Action?
- h) How to declare variable in JSP.
- i) Which type driver is a java native interface (JNI) call on database specific native client API?
- j) Does the JDBC-ODBC Bridge support multiple concurrent open statements per connection?

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

2. a) Create a simple HTML page which demonstrates the use of various types of lists. 6M
Try adding a definition list which uses an unordered list to define term.
- b) Create a HTML document that has your image and your friend's image with a specific height and width. Also when clicked on the images it should be navigate to their respective profiles. 6M

(OR)

3. a) Describe the different ways that CSS styles can be added to a page. 6M
- b) Write a JavaScript which validates registration form. 6M

UNIT-II

4. a) Define an XML Schema. Show how an XML schema can be created. 6 M
- b) Explain the following built –in objects of java Script. 6 M
- i) window ii) document

(OR)

5. a) Discuss the differences between DOM and SAX Parsers. 6 M
- b) Discuss in detail about well formed XML and Valid XML. 6 M

UNIT-III

6. a) Explain about JDBC drivers. 6 M
- b) What is a Servlet? Explain Servlet life cycle methods. 6 M

(OR)

7. a) Explain how to use session tracking mechanisms using Servlet API. 6 M
- b) Write a simple application in which the HTML form can invoke the servlet. 6 M

UNIT-IV

8. a) Describe and discuss the Different JSP Implicit Objects? 6 M
- b) Explain about scripting elements. 6 M

(OR)

9. a) Explain Error Handling and debugging with an example. 6 M
- b) Write a JSP code for passing control between two JSP pages. 6 M

UNIT-V

10. a) Explain JDBC Driver types. 6 M
- b) Write a short note on Javax.sql package 6 M

(OR)

11. Write a JSP program for accessing the database and displaying all the records from the database. 12 M