AR13

CODE: 13CE3016 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.TECH II SEMESTER REGULAR EXAMINATIONS, MAY, 2016

DESIGN OF STEEL STRUCTURES
(CIVIL ENGINEERING)

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

PART-A

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

1. a) Discuss the disadvantages of welding
   b) What is the effective throat thickness of fillet weld for two faces connecting at 80^0angle?
   c) Explain how the design of the design of the simple beam differs from that of compounded beam.
   d) Write a note on unsupported beams
   e) What is slenderness ratio?
   f) Give a brief note on splicing of columns
   g) What type of loads are resisted by Gantry girders
   h) Highlight the impact factors in the design of Gantry girders
   i) How bearing stiffeners in plate girders prevent buckling of web.
   j) What is the maximum permissible value of slenderness ratio for lacing bars in lacing system?

PART-B

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

UNIT-I

2. a. Why fillet welds are preferred in comparison to butt weld? 4
   b. With neat sketches explain different types of welds 8

(OR)

3. a. A 120mm diameter and 6mm thick pipe is welded to a 14mm plate by fillet weld. The pipe is subjected to a vertical load of 5kN at 1.00m from the welded end and a twisting moment of 1.4kN.m. Design the joint 6
   b. A plate bracket, carrying a load of 120 kN at an eccentricity of 100 mm, is connected to the face of a steel stanchion by fillet welds on both sides of the plate. 6
   i) Determine the size of the fillet weld
   ii) If 8 mm fillet weld is used, determine the depth of the plate
   iii) If 8 mm fillet weld is used with a bracket of 280 mm depth, calculate the resulting stress in the weld

UNIT-II

4. A simply supported beam of span 6 m carries a u.d.l. of 80 kN/m inclusive of its self weight. Design the beam if it is laterally unsupported and carry-out the necessary checks 12

(OR)

5. Design a simply supported beam of span 4m carrying a reinforced concrete floor capable of providing lateral restraint to the top compression flange. The uniformly distributed load is make up of 35kN/m imposed load and 25KN/m dead load. Assume Fe 410 grade steel 12

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UNIT-III

6. a. Write about different types of tension members with a help of neat sketches 6
   b. Explain the I.S codal specifications for permissible tensile stresses 6

(OR)

7. Design a laced column of height 10m with two channels back to back carrying a factored axial load of 800KN 12

UNIT-IV

8. Design a simply supported Gantry girder for an industrial shed to support an electric overhead crane using the following stats: 12
   Span Gantry girder-4 m
   Crane capacity-160 kN
   Weight of the crane excluding the crab- 250kN
   Weight of the crab-60kN
   Minimum hook approach-0.8 m
   Wheel base-5.3 m
   Span crane girder- 20m
   Height of the rail- 105 mm

(OR)

9. Design a simply supported Gantry girder for the following data. The girder is electrically operated. Yield stress of the steel is 250N/mm^2. Use 16 mm diameter bolts of grade 4.6. 12

   Span of crane girder (effective)-20 m
   Effective span of the Gantry girder- 7 m
   Crane capacity-220kN
   Weight of the crane excluding the crab- 200kN
   Weight of the crab-60kN
   Wheel base distance-3.4 m
   Minimum hook approach-1.1 m
   Self weight of the rail- 0.3 kN/m
   Height of the rail-75 mm

UNIT-V

10. Design cross section of a welded plate girder of span 20m carrying a load of 80 KN/m. Avoid use of stiffeners. 12

(OR)

11. Design the mid span section of a riveted plate girder for a live load of 60 kN/m and a dead load of 40 kN/m in addition to its self weight. The girder is simply supported over an effective span of 20 m. Allow for impact. Carry out the necessary checks. Also design the riveted connections of flange angels to web and flange angles to flange plates. Sketch the design details 12

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CODE: 13EE3017 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.TECH II SEM REGULAR EXAMINATIONS, MAY, 2016

POWER SYSTEMS-III
(Electrical and Electronics Engineering)

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

PART-A

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

1. a) What is the difference circuit between air blast and air break breakers?
   b) Define breaking capacity of a circuit breaker.
   c) Write the basic components of a static relay.
   d) What is IDMT relay?
   e) Mention different faults on stator of an alternator.
   f) What is differential protection?
   g) Draw the RX diagram of impedance relay?
   h) Define Translay scheme.
   i) What is Peterson coil?
   j) What is meant by Over – Reach?

PART-B

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

UNIT-I

2.	a	Discuss the operating principles and area of applications of air blast circuit breaker.	6M
	b	Describe the construction , operating principle and working of Vaccum circuit breaker.	6M
		(OR)	
3.	a	Explain Slepains theory of arc interruption.	4M
	b	Explain the necessity of resistance switching in circuit breakers.	8M

UNIT-II

4.	a	Explain with the help of neat sketch, construction and working of directional induction type over current relay.	6M
	b	Describe the operation of a solenoid and plunger type relays.	6M
		(OR)	
5.	a	Describe the operation of watt-hour meter type induction relay.	6M
	b	What is universal torque equation? Derive the torque equation of impedance relay from universal torque equation.	6M

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UNIT-III

6.	a	Explain Mertz-price protection scheme employed for the protection of alternators.	8M
	b	The neutral point of a 11KV alternator is earthed through a resistance of 12Ω, the relay is set to operate when there is out of balance current of 0.8A. The CT's have a ratio of 200/5. What percentage of the winding is protected against earth faults? What must be the minimum value of earthing resistance required to give 90% of protection to each phase?	4M
		(OR)	
7.	a	Draw and explain construction and working of Buchholtz relay.	6M
	b	Describe the rotor protection of the alternator against earth faults.	6M

UNIT-IV

8.	a	Explain the need of bus bar protection and difficulties in bus bar protection.	6M
	b	What is carrier aided current protection? Explain.	6M
		(OR)	
9.	a	Describe the time – graded protection of transmission lines.	6M
	b	Explain 3 – zone protection of transmission lines.	6M

UNIT-V

10.	a	Explain the necessity of neutral grounding.	6M
	b	What is insulation coordination? How is it useful in power system network?	6M
		(OR)	
11.	a	What is impulse test wave? Explain the volt-time characteristic.	6M
	b	Explain valve type lightning arrester with a neat diagram.	6M

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SET-2

Code No: 13EI3002

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech. II Semester Regular Examinations, MAY-2016

INSTRUMENTATION AND CONTROL SYSTEMS
(Mechanical Engineering)

Time: 3 hours **Max.Marks:70**

PART-A

Answer all questions **[1 X 10 = 10M]**

1. a) What are the elements of measurement system?
   b) What are the low pressure measuring devices?
   c) State relation between one bar and Hg.
   d) McLeod gauge is used to measure_____.
   e) What is seek beck effect?
   f) What is the principle of strain gauge load cell?
   g) What is the device used to measure shaft power?
   h) What do you mean by monitored control system?
   i) What is the type of system which is affected by internal and external disturbances?
   j) Define gain margin.

PART-B

Answer one question from each unit **[5 X 12 = 60M]**

UNIT-1

2. Explain the sources of error and their classification in measuring instruments and suggest mechanism to eliminate them.

(OR)

3. Explain the principles and working of manometers.

UNIT-2

4.Explain the operation of following:
   a) Rotameter b) Magnetic flow meter

(OR)

5. Explain the method of usage of resistance strain gauge.

UNIT-3

6. Explain about i) stroboscope and ii) dynamometers.

(OR)

7. Explain about i) capacitive transducer and ii) inductive transducers.

UNIT-4

8.Discuss about time-domain performance of first and second order systems with poles and zeros.

(OR)

9. By routh stability criterion determine the stability of the system represented by characteristic equation $9s^5-20s^4+10s^3-s^2-9s-10=0$ comment on the location of roots of the characteristic equation .

UNIT-5

10. Elaborate the importance of P and PI control algorithms

(OR)

11. Define and explain significance of following parameters.
   i) peak resonance ii) resonant frequency and iii) Bandwidth

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CODE:13EC3019 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.TECH II SEMESTER REGULAR EXAMINATIONS, MAY, 2016

MICROPROCESSOR AND MICROCONTROLLERS
(Electronics & Communication Engineering)

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

PART-A

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

1. a) What is the difference between procedure and macro
   b) Give special function of AX register of 8086
   c) What is meant by Non Maskable Interrupt
   d) Define Assembly Language
   e) Which directive is used to define the size of the variable
   f) How you distinguish microprocessor and microcontroller
   g) What is the needs of connecting 8259s in cascaded mode
   h) How many I/O lines in each port of 8051
   i) What is the need of Stack Memory
   j) Explain Asynchronous Data Transfer Scheme

PART-B

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

UNIT-I

2.	a	Explain with suitable example, how Physical address generated by the 8086	**5**
	b	Draw the pin diagram of 8086 and explain the maximum mode signals	**7**
		(OR)	
3.	a	Explain the Memory Organization of 8086 Microprocessor with neat ketch	**7**
	b	Explain the Bus Interfacing Unit functions of 8086 elaborately	**5**

UNIT-II

4.	a	Explain the data transfer instructions of 8086 with suitable examples	**6**
	b	Write an ALP in 8086 to determine the average of N-numbers	**6**
		(OR)	
5.	a	Explain Interrupt Vector Table with neat sketch	**6**
	b	Write an ALP in 8086 to determine the cube of given 8-bit number	**6**

UNIT-III

6.		Explain the architecture of 80386 with neat diagram	**12**
		(OR)	
7.	a	Explain Real Mode and Protected mode operations of 80386	**7**
	b	List the data types of 80386 Microprocessor	**5**

UNIT-IV

8.	a	Explain the block diagram of Intel 8255 with neat sketch	**8**
	b	Discuss the Command words of Intel 8255	**4**
		(OR)	
9.	a	Explain operations of Intel 8251 with suitable diagrams	**8**
	b	Give/List the features of Intel 8259	**4**

UNIT-V

10.	a	Explain the block diagram of Intel 8051 Micro Controller with neat sketch	**6**
	b	Explain memory organization of 8051	**6**
		(OR)	
11.	a	Explain various registers of 8051	**8**
	b	List the features of PIC Microcontroller	**4**

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CODE: 13CS3016 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

III B.TECH II SEMESTER RGULAR EXAMINATIONS, MAY, 2016

WEB TECHNOLOGIES
(Computer Science Engineering)

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

PART-A

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

1. a) Define CSS.
   b) Describe Attributes in XML .Also different types of attributes
   c) Using JavaScript, create a password type text box into your page and display the value of that box which will be entered by user.
   d) What are implicit Objects available to the JSP Page?
   e) What is cookie?
   f) What are the advantages of stored procedures, triggers, indexes?
   g) Specify the set out development goals of XML?
   h) How to build the web applications? Explain the steps ?
   i) What is DOM?
   j) List any four events associated with DHTML and explain each one with an example.

PART-B

Answer one question from each unit **[5 x 12=60]**

UNIT-I

2. Discuss the role of Forms as well as Frames in HTML with proper examples

(OR)

3. What is CSS? List out the Various CSS Properties. Explain the various concepts of CSS properties with neat

UNIT-II

4. Program a XML File using the following information structure including DTD section appropriately:- <Accounting>
   <Inventory>
   <Inventory_Item>
   <Invoices>
   <Invoice>
   <Item>
   <Sales>

   Note:
   i) Inventory_Item has an attribute namely id (Required).
   ii) Inventory_Item, Item & Sales can be Empty too.
   iii) Item has 3 attributes namely id (Required), qty & price.
   Sales has attribute namely ids (Required).

(OR)

5. Write XML file which will display the book information which includes
   (a) Title of Book (b) Author Name (c) ISBN Number (d) Edition

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UNIT-III

6. (a) Explain the usage of cookies in servlet with examples.
   (b) What is a servlet? Explain life cycle of a servlet. Illustrate with an example program

(OR)

7. Discuss the method of calling Java Beans in JSP page with example.

UNIT-IV

8. Develop an HTML document to generate ballot form for an election. The votes submitted are recorded on the server by a servlet handling the form. Cookies must be used to prevent multiple votes by the same client.

(OR)

9. Explain about Anatomy of a JSP page and JSP processing.

UNIT-V

10. Write a JDBC program to store and retrieve student details (id, name, branch, college) using prepared statement.

(OR)

11. a) Write Short notes on java.sql package?
    b) Explain with an example the application specific database actions?

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CODE:13EC3019 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.TECH II SEMESTER REGULAR EXAMINATIONS, MAY, 2016

MICROPROCESSOR AND MICROCONTROLLERS
(INFORMATION TECHNOLOGY)

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

PART-A

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

1. a) What is the difference between procedure and macro
   b) Give special function of AX register of 8086
   c) What is meant by Non Maskable Interrupt
   d) Define Assembly Language
   e) Which directive is used to define the size of the variable
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	b	List the features of PIC Microcontroller	**4**

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