

AR13

CODE: 13CE3015

SET-1

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

III B.Tech. II Semester Regular & Supplementary Examinations, April, 2018

Design of Concrete Structures –II (Civil Engineering)

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) What are the loads that act on bridge deck?
b) Sketch the types of column heads provided in flat slabs
c) One way shear is critical at _____ distance from face of the column.
d) When do you provide combined footing?
e) Calculate impact factor for IRC class AA tracked loading for a bridge of span 8m
f) Differentiate between bearing and friction piles
g) What is the total load of class AA wheeled vehicle?
h) Diameter of the bulb is _____ times the diameter of under reamed pile.
i) What is the minimum grade of concrete used in construction of water tanks?
j) Draw a neat sketch of an elevated water tank showing components

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. A Rectangular column of size 300mmX450mm carries a service load of 800kN. The SBC of the soil is 150kN/sqm. Design a Rectangular isolated footing to support the given column load. Use M25 & Fe415 materials.

(OR)
3. Design a combined footing for two columns C1 of 350mm x 350mm and C2 of 450mm x 450mm carrying axial service load of 800kN and 1100kN. The width of the footing is restricted to 2.25m. Columns are spaced at 3.5m centre to centre. The SBC of soil is 110 kN/m². Use M20 concrete and Fe415 steel. Draw reinforcement detailing.

UNIT-II

4. Design a simply supported roof slab for a circular room 4.5m inside diameter. The thickness of wall is 230mm and the slab projects outside the walls by 1m all around. The live load on the slab is 3kN/m^2 at service Use M20 concrete and Fe 415 steel.

(OR)

5. Design a interior panel of typical flat slab which is supported on 450mm diameter circular columns spaced 6mx5m apart in both the directions. The live load on the flat slab is 4kN/m^2 . Use Fe 415 steel and M20 concrete

UNIT-III

6. Design a solid slab bridge for an effective span of 6.5m. The clear road way is 7.5m with 0.6m wide kerbs on either side. The bridge is to be designed for class A loading. Thickness of wearing coat is 75mm. Grades of materials to be used are M20 concrete and Fe415 steel.

(OR)

7. Explain classification of bridges with neat sketches

UNIT-IV

8. Design a pile cap for supporting a column of section 400mmx400mm carrying an axial load of 1000kN at service state. The pile cap contains a group of four friction piles each of 250mmdiameter for transfer of load from column to soil. Use M30 concrete and Fe 415 steel.

(OR)

9. Design a reinforced concrete pile 400mm square for transmitting an axial load of 600kN under service considerations. The pile is to be embedded in hard strata up to depth of 7.8m. Take embedment length of pile into the foundation as 100mm. The materials to be used are M25 concrete and HYSD steel of grade Fe 415

UNIT-V

10. Design a Rectangular tank resting on ground with internal dimensions as 6mx5mx3m high. Take the free board as 300mm. Use M30 grade concrete and HYSD steel of grade Fe415

(OR)

11. Design a Circular tank with flexible base for a capacity of 200 kilo litres resting on ground having a soil with SBC of 120kN/m^2 . Provide a depth of 4.0m with a free board of 250mm. The construction materials to be used are M30 grade concrete and Fe415 steel.

AR13

SUB CODE: 13HS3005

SET-2

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

III B.Tech. II Semester Regular & Supplementary Examinations, April, 2018

MANAGERIAL ECONOMICS AND MANAGEMENT SCIENCE

(Common to EEE & ECE)

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 X 10 = 10]

1.
 - a) What is meant by 'demand'?
 - b) What do you understand by a change in demand?
 - c) What is iso-quant?
 - d) Write a note on the Law of Returns to Scale
 - e) Distinguish between internal economies and external economies
 - f) Write a note on administered prices
 - g) Define oligopoly.
 - h) Why is management important?
 - i) Mention any four features of management
 - j) Define HRD

PART-B

Answer one question from each unit

[5 x 12=60]

UNIT-I

2. Discuss the salient features and significance of managerial economics.
- (OR)
3. State and explain the law of demand. Are there any exceptions to the law of demand.

UNIT-II

4. What is a production function? How does a long run production function differ from a short run production function?
- (OR)
5. Define Cost, Explain the various types of costs.

UNIT-III

6. Define Monopoly. How does a firm attain equilibrium under monopoly.
- (OR)
7. Discuss the pattern of oligopoly market behaviour.

UNIT-IV

8. Explain the principles of management as outlined by Henri Fayol.
- (OR)
9. Explain the concept of social responsibility. What could be the different objectives the management can set for itself? Illustrate.

UNIT-V

10. Define personnel management. Analyse how it continues to be an integral part of the organization.
- (OR)
11. What are principles of manpower planning? How do you apply these to a software company?

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CODE: 13ME3018

SET-1

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

III B.Tech. II Semester Regular & Supplementary Examinations, April, 2018

METROLOGY (Mechanical Engineering)

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) Define standardisation?
b) What is Tolerance zone?
c) What are straight edges?
d) Explain Hole basis system
e) What is Nominal size?
f) What are angle gauges?
g) Write the use of limit gauges.
h) Explain RMS value method for surface roughness measurement.
i) What is the use of CMM?
j) Write any two applications of Optical flats.

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. a) Explain hole basis system and shaft basis system. 8M
b) Explain the relationship Tolerance and Cost. 4M
- (OR)
3. a) Explain with neat sketches the Clearance fit, Interference fit and Transition fit. 8M
b) Explain the Fundamental deviation. 4M

UNIT-II

4. a) Write about the Sine bar and its applications. 6M
b) Explain the working of Optical bevel protractor. 6M

(OR)

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| 5. | a) Explain working of Mechanical Comparator. | 8M |
| | b) What is wringing process in using Slip gauges | 4M |

UNIT-III

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| 6. | a) Explain the working of Auto Collimator. | 8M |
| | b) What are Surface plates? | 4M |

(OR)

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| 7. | a) Design the workshop gauges-GO & NO-GO to manufacture a component with the fit $25H_7/g_6$ where the fundamental deviation for g-shaft is -7microns, the diameter range for the tolerance grades is 18-30mm. | 9M |
| | b) What are optical flats? | 3M |

UNIT-IV

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| 8. | a) Explain the working of Taylor Hobson Talysurf. | 8M |
| | b) Explain RMS value method for surface roughness. | 4M |

(OR)

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| 9. | a) Explain any four terminology in Surface roughness. | 8M |
| | b) Write about CLA method of surface roughness measurement. | 4M |

UNIT-V

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| 10. | a) Explain three wire method of measuring Effective diameter. | 8M |
| | b) Write about the CMM machine. | 4M |

(OR)

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| 11. | a) Explain any six alignment tests performed on the Lathe | 6M |
| | b) Explain the Gear tooth Vernier for measurement of tooth thickness. | 6M |

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CODE: 13CS3015

SET-1

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

III B.Tech. II Semester Regular & Supplementary Examinations, April, 2018

**DATA WAREHOUSING AND DATA MINING
(Common to CSE & IT)**

Time: 3 Hours

Max Marks: 70

PART-A

ANSWER ALL QUESTIONS

[1 x 10 = 10 M]

1. a) Name some of the data mining applications.
- b) What are the benefits of a data warehouse?
- c) What is a decision tree algorithm?
- d) Is data mining independent subject? Justify.
- e) Why do we pre-process the data?
- f) What are the methods to overcome model over fitting?
- g) Why is association rule necessary?
- h) What do you mean by evolution analysis?
- i) List out the real time applications of K-means?
- j) What is density based clustering?

PART-B

Answer one question from each unit

[5x12=60M]

UNIT-I

2. a) What are the steps involved in data pre-processing. **6M**
- b) Describe measurement and data collection issues of data quality. **6M**

(OR)

3. a) What is data mining? Briefly explain its motivating challenges. **6M**
- b) What are data mining tasks? Briefly explain. **6M**

UNIT-II

4. a) Discuss about analytical characterization. **6M**
- b) Explain mining the class comparisons. **6M**

(OR)

5. a) What is meant by indexing OLAP data? **6M**
b) Differentiate between OLAP and OLTP. **6M**

UNIT-III

6. a) Write short notes on rule generation and compact representation of frequent item sets. **6M**
b) Explain the concept of apriori principle. **6M**

(OR)

7. a) What is meant by frequent item set? Explain with an example. **6M**
b) What are strength and weaknesses of Apriori algorithm? **6M**

UNIT-IV

8. a) Explain the decision tree classifier with the help of a diagram. **6M**
b) What are the strengths and weaknesses of decision tree? **6M**

(OR)

9. a) Explain the parameters for the evaluation of classifier. **6M**
b) Write short notes on rule-based classification. **6M**

UNIT-V

10. a) What do you mean by clustering? Explain different types of clusters. **6M**
b) Write the algorithm of bisecting K-means and explain how it is different from simple K-means? **6M**

(OR)

11. Write short notes on
a) DB SCAN algorithm. **6M**
b) Agglomerative hierarchical clustering. **6M**