AR13

CODE: 13CE3018 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July- 2016

TRANSPORTATION ENGINEERING-II

(CIVIL ENGINEERING)

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

PART-A

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

1. a) What is construction joint?
   b) Define shoving.
   c) What is the Importance of drainage?
   d) What are the functions of sleepers?
   e) What is creep? How is it prevented?
   f) What are the functions of rails?
   g) Define Adzing of sleepers
   h) Explain the terms cross wind component and wind coverage.
   i) List the various imaginary surfaces around the airport.
   j) Define Apron

PART-B

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

UNIT-I

2. (a) Explain the CBR method for designing of flexible pavement with neat sketch 6M
   (b) Difference between flexible pavement and rigid pavement 6M

(OR)

3. (a) Define ESWL and Explain its significance in design of highway with neat sketch 4M
   (b) Explain the different types of joints in pavements with neat sketch. 8M

UNIT-II

4. (a) Explain the construction procedure of cement concrete pavement. 6M
   (b) Explain the construction of WBM 6M

(OR)

5. (a) What are quality control measures in pavement construction? 6M
   (b) What is necessity of highway drainage for pavement construction 6M

UNIT-III

6. (a) Explain about benefits for highway users 6M
   (b) Discuss about the methods in economic analysis for highways 6M

(OR)

7. Write about the highway cost and highway finance in India 12M

UNIT-IV

8. Compare the different types of sleeper. Give all details. 12M

(OR)

9. (a) Explain various requirements of an ideal permanent way with neat sketch? 6M
   (b) With neat sketches, differentiate between reception, Outer signal and departure signals. 6M

UNIT-V

10. (a) The length of a runway at mean sea level, standard temperature and zero gradients is 1600m. The site has an elevation of 320m, with a reference temperature of 33.6^{o}C. The runway has to be constructed with an effective gradient of 0.25%. Determine the actual length of the runway at site. 6M
    (b) List the factors to be considered for the selection of site for an airport. 6M

(OR)

11. Describe the importance of runway lighting. Explain threshold lighting with the help of sketches 12M

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CODE: 13EI3002 **SET-1**

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

INSTRUMENTATION AND CONTROL SYSTEMS
(MECHANICAL ENGINEERING)

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

PART-A

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

1. a) What are the sources of errors
   b) Which parameter can be measured with Diaphragm gauges
   c) Explain gauge factor
   d) How to measure flow of liquids
   e) List out applications of transducers
   f) Compare acceleration measurement from that of speed measurement
   g) Give an example of open loop system
   h) Describe first order control system with an example
   i) Give a note on step input
   j) What is gain margin

PART-B

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

UNIT-I

2. a) What are the various functional descriptions of measurement instruments? Discuss with examples **6 M**
   b) Describe the Ionization type of pressure gauges in-detail. **6 M**

(OR)

3. a) How a manometer functions. Also explain how the inclined manometers are more sensitive compared to single column manometer. **6 M**
   b) Sketch and explain the working principle of McLeod Gauge? **6 M**

UNIT-II

4. a) If a strain gauge has a low gauge factor. What does it indicates. **6 M**
   b) Explain principle and operation of thermo couples with neat sketch? **6 M**

(OR)

5. a) Name the various types of strain gauges used for measurements. **6 M**
   b) Explain the measurement of flow rate using ultrasonic flow meters. **6 M**

UNIT-III

6. a) Explain principle and operation of inductive displacement transducer. **6 M**
   b) Sketch and explain the working principle and working of stroboscope. **6 M**

(OR)

7. a) Explain principle and operation of dynamometer. **6 M**
   b) Distinguish between capacitive and resistive type transducers. **6 M**

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UNIT-IV

8. a) Establish the correlation between time and frequency domain specifications for a second-order system **6 M**

   b) Using Routh-Hurwitz, test the stability of the system whose characteristic equation is $s^4+5s^3+8s^2+10s+16$ **6 M**

(OR)

9. System characteristic equation is $s^6+12s^5+13s^4+6s^3+4s^2+2s+k = 0$ **12 M**
   - i) Find the number of poles
   - ii) Find the k value
   - iii) How many poles lice on right of s-plane and left of s-plane
   - iv) System is stable or not by using RH stability

UNIT-V

10. Using Nyquist stability criterion determine the stability of the closed loop system with $G(s)\,H(s) = 100/\, s(s+1)\,(s^2+2s+2)$ **12 M**

(OR)

11. a) Explain Nyquest stability criterion **6 M**

    b) With the help of Nyquest plot assess the stability of a system $G(s)=3/s(s+1)(s+2)$ **6 M**

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CODE: 13CS3015 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech II Semester Supplementary Examinations, July- 2016

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) What is data mining?
   b) What is Agglomerative Hierarchical Clusteing?
   c) What is an Measurement in Data mining
   d) What is a Data Ware House.
   e) Define Correlation.
   f) Explain about Discretization?
   g) What is Prediction?
   h) What is Maximal Frequent Item set.
   i) What is Association Analysis?
   j) What is Tree Pruning?

PART-B

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

UNIT-I

2. (a) Explain in detail about types of data sets. 6M
   (b) Explain data mining tasks with one example. 6M

(OR)

3. (a) Briefly Explain about the forms of Data Pre-processing 6M
   (b) Explain the Proximity Measures with Examples. 6M

UNIT-II

4. (a) Write the Differences between Operational Databases and Data Warehouses 6M
   (b) Draw and Explain the three tier data ware house architecture 6M

(OR)

5. (a) Discuss Indexing of OLAP Data. 6M
   (b) Explain about Attribute Oriented Induction 6M

UNIT-III

6. (a) Write the algorithm for Frequent item set generation 6M
   (b) Explain in detail about Rule Generation 6M

(OR)

7. (a) Explain Support counting. 4M
   (b) Explain FP_Growth Algorithms 8M

UNIT-IV

8.	(a)	Explain the Linear, Multiple and Non linear Regressions	6M
	(b)	Explain about Naive Bayesian classification	6M
		(OR)	
9.	(a)	Explain about Back propagation	6M
	(b)	Briefly outline the major steps of Decision Tree Induction	6M

UNIT-V

10.	(a)	Explain the Bisecting K-Means Clustering Algorithm with an Example.	6M
	(b)	Define Cluster Analysis? What are different types of clusters? Explain.	6M
		(OR)	
11.	(a)	Write DBSCAN algorithm and its Time and Space Complexity	6M
	(b)	Explain how to select DBSCAN Parameters	6M

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