

**TRANSPORTATION ENGINEERING-II
(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 necessity of sleepers in a railway track. What are the desirable qualities or requirements of good sleepers. (6M)
(b) What are the ideal requirements of Rail fastenings? (8M)
(OR)
2 Define Rail Joint. Explain various types with figures (14M)

UNIT-II

- 3 (a) What is gradient? Explain the different types of gradients in railway track Explain Grade Compensation. (6M)
(b) What is a Transition curve, what are the different types and what are the requirements for an ideal transition curve? (8M)
(OR)
4 (a) Explain, with neat sketches, the various considerations for providing extra clearances on Horizontal curves. (8M)
(b) An 8° curve branches off from 4° main curve in B.G. layout. If the speed on branch line is 28 Kmph, find the speed on main line. Cant deficiency is 7.61 cm. (6M)

UNIT-III

- 5 (a) What is the purpose of Turnout? Give various types with neat diagram. (8M)
(b) Differentiate with a neat sketch of Diamond and Scissors crossing. (6M)
(OR)
6 (a) With a neat sketch, explain the working of semaphore signal (7M)
(b) What is interlocking? Explain various functions of interlocking. (7M)

UNIT-IV

- 7 (a) Explain the different components of Airport in detail. (8M)
(b) What is a Wind rose diagram? What are its types? Explain any one. (6M)
(OR)

- 8 (a) Explain the various factors which affect the location of Exit Taxiway. (6M)
(b) What are the basic assumptions made in finalizing runway length? Explain. (8M)

UNIT-V

- 9 (a) What is Dredging? Classify the different types of dredging works. (6M)
(b) Differentiate Dry and Wet Dock in detail (8M)
(OR)
10 (a) Draw a neat sketch of artificial harbor, explain the various components. (8M)
(b) What are the different types of break waters? Explain any two. (6M)

AR16

CODE: 16EE4029

SET-1

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

IV B.Tech II Semester Supplementary Examinations, November-2020

UTILIZATION OF ELECTRICAL ENERGY

(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) What do you understand by load equalization? 7M
- b) Give the factors to be considered for choice of motor. 7M

(OR)

2. a) Define heating and cooling time constants. Define terms continuous rating and short time rating. 8M
- b) Discuss Torque slip characteristics of a induction motor . 6M

UNIT-II

3. a) Write short notes on dielectric heating and list out some of the applications. 7M
- b) Explain working of indirect resistance heating with neat diagram. Give applications. 7M

(OR)

4. a) Give electric welding accessories to carry out proper welding operation. 6M
- b) Explain the working of upset butt welding with neat diagram. Give applications 8M

UNIT-III

5. a) Discuss inverse square law and Lambert's cosine law of illumination. 8M
- b) Two similar lamps having luminous intensity of 600 CP in all directions below horizontal are mounted at a height of 10m. What must be the spacing between the lamps so that the illumination on the ground midway between the lamps shall be at least one-half of the illumination directly below the lamp? 6M

(OR)

6. a) Describe the construction and working of a fluorescent tube lamp. 7M
- b) Explain the construction and working of mercury vapour discharge lamp. 7M

UNIT-IV

7. a) Draw and explain the typical speed-time curve for an electric traction. 8M
- b) An electric train is to have the acceleration and braking retardation of 0.6kmphps and 3 kmphps respectively. If the ratio of the maximum speed to average speed is 1.3 and time for stop is 25 seconds. Determine the schedule speed for a run of 1.6Km. Assume the simplified trapezoidal speed-time curve. 6M

(OR)

8. a) Briefly discuss the special design features of traction motors? 6M
- b) Explain in detail the mechanics of train movement 8M

UNIT-V

9. a) Define the specific energy consumption. Explain the factors affecting the specific energy consumption. 7M
- b) Write short notes on tractive effort required to overcome the effect of gravity. 7M

(OR)

10. a) Write short notes on tractive effort required for linear and angular acceleration. 7M
- b) A train with an electric locomotive weighing 380 tonnes is to be accelerated up a gradient of 1 in 100 at an acceleration of 1 kmphps. If the train resistance is 75 N/tonne, coefficient of adhesion is 0.28 and effect of rotational inertia is 15% of the dead weight. Calculate the minimum adhesive weight of the train. 7M

AR16

CODE: 16ME4034

SET-2

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

IV B.Tech II Semester Supplementary Examinations, November-2020

**PRODUCTION PLANNING AND CONTROL
(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) | Explain with a sketch the Pre-planning, Planning and Control functions of PPC | 10M |
| b) | Explain what is Forecasting and its need in for any Production system. | 4M |
| (OR) | | |
| 2. a) | Explain Quantitative and Qualitative method of forecasting. | 8M |
| b) | Explain various types of Production systems with examples. | 6M |

UNIT-II

- | | | |
|-------------|---|----|
| 3. a) | Explain Influencing Factors of Effective Capacity. | 5M |
| b) | Explain in detail the functions and objectives of MPS. | 9M |
| (OR) | | |
| 4. a) | What is aggregate planning? Explain The strategies in aggregate planning. | 9M |
| b) | Explain Master Production Schedule, Capacity Planning | 5M |

UNIT-III

- | | | |
|-------------|---|----|
| 5. a) | Explain P-System and Q-System, ABC analysis | 9M |
| b) | Explain the functions of Inventory Management. | 5M |
| (OR) | | |
| 6. a) | What are various Inventory costs explain in detail. | 8M |
| b) | Write short notes on : EOQ, JIT,MRP | 6M |

UNIT-IV

- | | | |
|-------------|---|----|
| 7. a) | Explain the characteristics of BPR. | 5M |
| b) | Name and Explain the different types of reliability systems | 9M |
| (OR) | | |
| 8. a) | Explain business process re-engineering means. | 7M |
| b) | Distinguish Reliability, Maintainability, Availability of a system. | 7M |

UNIT-V

- | | | |
|-------------|--|----|
| 9. a) | Explain with neat sketches Route sheet, Bill of material. | 9M |
| b) | Explain procedure of routing and the Factors affecting routing procedure | 5M |
| (OR) | | |
| 10. a) | What is expediting? Explain types of expediting processes. | 9M |
| b) | List the duties of dispatcher | 5M |

AR16

CODE: 16HS4005

SET-1

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

IV B.Tech II Semester Supplementary Examinations, November-2020

**MANAGERIAL ECONOMIC AND MANAGEMENT SCIENCE
(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) Define Managerial Economics. Explain the nature and scope of Managerial Economics? 7M
b) Define elasticity of demand. How do you interpret the different types of elasticity? 7M
- (OR)
2. a) Explain the determinants of Demand? 7M
b) Evaluate survey based demand forecasting methods with appropriate examples. 7M

UNIT-II

3. a) Define Iso-Quants & List out various types of Iso-Quants & Explain them with diagrams. 7M
b) Define Break-even point & How do you determine it. Show graphical presentation of Break Even Analysis. 7M
- (OR)
4. a) Briefly explain various economies of scale. 7M
b) Explain the operation of the law of diminishing returns & its business implications. 7M

UNIT-III

5. a) Define Markets? How differently are Markets classified? What are the important features in any Market structure? 7M
b) What are the characteristics of Oligopoly? 7M
- (OR)
6. a) Differentiate between perfect & imperfect markets. 7M
b) What is perfect competition? How is market price determined under conditions of perfect competition? 7M

UNIT-IV

7. a) What is the significance of Hawthorne experiments for management? 7M
b) Explain the Maslow's Theory of Hierarchy of Human Needs. 7M
- (OR)
8. a) Discuss the main components of Theory of Scientific Management. 7M
b) Bring out the contrast between Theory-X and Theory-Y. 7M

UNIT-V

9. a) "Consumer is a king" comment on the statement in the light of marketing concept. 7M
b) Explain the various stages of product life cycle with an example of your own choice. 7M
- (OR)
10. a) The success of an organization to a greater extent depends on how the HRD acts'- Substantiate. 7M
b) Briefly explain the concept of selection. What are the different techniques of selection followed by a Personnel Manager 7M

