**18CED41**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **December, 2021** | **Civil Engineering** | | |
| **Seventh Semester** | **RAILWAY AND AIRPORT ENGINEERING** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (1X10 = 10 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

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| 1. |  | | 10X1 = 10 Marks | | | |
| 1. | a) | List the factors affecting the choice of Railway gauge. | | CO1 | |  |
|  | b) | Write any two functions of Rails? | | CO1 | |  |
|  | c) | What is the minimum no of sleepers required for a 2km length of Rail for BG? | | CO1 | |  |
|  | d) | What are the different types of gradients? | | CO2 | |  |
|  | e) | Define super elevation? | | CO2 | |  |
|  | f) | Draw the right hand turnout? | | CO2 | |  |
|  | g) | Define apron. | | CO3 | |  |
|  | h) | What are utility airports? | | CO3 | |  |
|  | i) | Distinguish between quays and Jetties? | | CO4 | |  |
|  | j) | Write an empirical design equation for Mc Leod method? | | CO4 | |  |
| **Unit - I** | | | | | | |
| 2. | a) | Explain the requirements of an ideal permanent way? | | CO1 | **5M** | |
|  | b) | Explain about concrete sleepers/ | | CO1 | **5M** | |
|  |  | **(OR)** | |  |  | |
| 3. | a) | What is meant by wear of Rails? How do you classify the wear? Discuss the various causes of wear? | | CO1 | **5M** | |
|  | b) | Discuss about conning of wheels? | | CO1 | **5M** | |
| **Unit - II** | | | | | | |
| 4. | a) | If an 8° curve track diverges from main curve 6° in an opposite direction of BG yard. Calculate speed and super elevation of branch line if the maximum speed permitted on main line is 45kmph. | | CO2 | **5M** | |
|  | b) | Explain different types of gradients? | | CO2 | **5M** | |
|  |  | **(OR)** | |  |  | |
| 5. | a) | Briefly explain about the classification of signals. | | CO2 | **5M** | |
|  | b) | Briefly about the left-hand turnout. | | CO2 | **5M** | |
| **Unit - III** | | | | | | |
| 6. | a) | Write a short note on correction for elevation and temperature for a runway? | | CO3 | **5M** | |
|  | b) | Explain about aero plane components? | | CO3 | **5M** | |
|  |  | **(OR)** | |  |  | |
| 7. | a) | Describe the factors effecting selection of site for airport? | | CO3 | **5M** | |
|  | b) | Write a short note on zoning laws? | | CO3 | **5M** | |
| **Unit - IV** | | | | | | |
| 8. | a) | Explain the step by step procedure for rigid pavement by using PCA method of pavement design? | | CO4 | **5M** | |
|  | b) | Explain about design factors of pavement design? | | CO4 | **5M** | |
|  |  | **(OR)** | |  |  | |
| 9. | a) | Write a short note on break waters? | | CO4 | **5M** | |
|  | b) | Explain briefly about site selection of harbors? | | CO4 | **5M** | |

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