**18CED41**

**Hall Ticket Number:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **IV/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **November,2022** | **Civil Engineering** | | |
| **Seventh Semester** | **Railway and Airport Engineering** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. | a) | Write any two functions of rails. | CO1(BL1) | |  |
|  | b) | What are the different materials that can be used as a ballast? | CO1(BL1) | |  |
|  | c) | What is negative super elevation? | CO2(BL1) | |  |
|  | d) | List the classification of signals in railways. | CO2(BL1) | |  |
|  | e) | Mention the limitations for air transport? | CO2(BL1) | |  |
|  | f) | Write a short note on zoning laws | CO1(BL1) | |  |
|  | g) | What is windrose diagram? | CO3(BL1) | |  |
|  | h) | Which parameter of soil will be known by conducting CBR test? | CO3(BL1) | |  |
|  | i) | Explain break waters. | CO4(BL1) | |  |
|  | j) | Write the classification of harbors. | CO4(BL1) | |  |
| **Unit - I** | | | | | |
| 2. | a) | Differentiate roadways with railways. | CO1(BL1) | **5M** | |
|  | b) | Explain all the components of the permanent way using a neat sketch. | CO1(BL1) | **5M** | |
|  |  | **(OR)** |  |  | |
| 3. | a) | Enumerate the functions of rails. Discuss about various types of rails. | CO1(BL1) | **5M** | |
|  | b) | Classify the various types of sleepers. | CO1(BL2) | **5M** | |
| **Unit - II** | | | | | |
| 4. | a) | What is a crossing? What are the requirements of good crossing? | CO2(BL1) | **5M** | |
|  | b) | A curve of 6o is situated on a BG track. If the maximum permissible speed on the curve is 65 kmph, determine the equilibrium cant. What is the maximum speed that can be permitted allowing maximum cant deficiency? | CO2(BL2) | **5M** | |
|  |  | **(OR)** |  |  | |
| 5. | a) | Draw a neat sketch of a left-hand turnout explaining its components. | CO2(BL1) | **5M** | |
|  | b) | Explain the necessity of gradients. Discuss the types of gradients giving their permissible values adopted in Indian railways. | CO2(BL1) | **5M** | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit - III** | | | | |
| 6. | a) | Explain aircraft characteristics in detail? | CO3(BL1) | **5M** |
|  | b) | What are the factors to be considered while selecting the airport site? | CO3(BL1) | **5M** |
|  |  | **(OR)** |  |  |
| 7. |  | The length of runway under standard conditions is 1500m. The airport site has an elevation of 300m. Its reference temperature is 37.940 C. If the runway is to be constructed with an effective gradient of 0.15%, determine the corrected runway length. | CO3(BL3) | **10M** |
| **Unit - IV** | | | | |
| 8. | a) | Explain about CBR method of pavement design. | CO4(BL2) | **5M** |
|  | b) | Explain the factors to be considered for the design of Airport Pavements. | CO4(BL2) | **5M** |
|  |  | **(OR)** |  |  |
| 9. | a) | Write short notes on Wharves and jetties. | CO4(BL1) | **5M** |
|  | b) | What are the requirements of a good port? | CO4(BL1) | **5M** |

****