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Roll No. ....

**6th Sem / Branch : Civil Engineering/Constr. Mgmt.  
Civil Engg (Spl. Highway Engg.)  
Sub. : Railways, Bridges & Tunnels**

Time : 3Hrs. M.M. : 100

## **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory  
(10x1=10)

- Q.1 The formation width for a railway track depends on the (CO3)

  - i) Type of gauge
  - ii) Number of tracks to be laid side by side
  - a) Only (i) b) Only (ii)
  - c) Both (i) and (ii) d) None of these

Q.2 The rail is designated by \_\_\_\_\_. (CO5)

  - a) Weight
  - b) Length
  - c) Weight per unit length
  - d) Cross-section

Q.3 \_\_\_\_\_ are provided in the bridges to allow free movement of the girder without any difficulty. (CO17)

  - a) Bearings
  - b) Piers
  - c) Foundations
  - d) End supports

Q.4 The end supports of the super structure of a bridge are known as \_\_\_\_\_. (CO16)

  - a) Piers
  - b) Abutments

- c) Foundation  
d) None of these

Q.5 The span for which, total cost of the bridge structure is minimum is called \_\_\_\_\_. (CO13)

a) Clear span      b) Clearance  
c) Economic span      d) All of these

Q.6 The most suitable soil used for compressed air tunneling is \_\_\_\_\_. (CO19)

a) Silt      b) Clay  
c) Sand      d) Gravel

Q.7 Ribs are used for strengthening and stiffening the liner plate for tunnels of diameter greater than \_\_\_\_\_. (CO20)

a) 2 m      b) 4 m  
c) 3 m      d) 5 m

Q.8 The suitable tunneling method used for laying underground sewer is? (CO22)

a) Army method  
b) Needle beam method  
c) Italian method  
d) German method

Q.9 The permanent drainage in a tunnel system is affected by \_\_\_\_\_. (CO22)

a) Nature of tunnel      b) Type of soil  
c) Type of lining      d) All of these

Q.10 A minimum illumination of \_\_\_\_\_ should be provided at the tunnel and shaft heading during drilling, mucking and sealing. (CO23)

a) 50 lux      b) 75 lux  
c) 100 lux      d) 125 lux

## **SECTION-B**

- Note:** Objective type questions. All questions are compulsory.  
(10x1=10)
- Q.11 The railway provided over the ground surface are known as \_\_\_\_\_. (CO1)
- Q.12 The way of placing rails to an inward slope of 1 in 20 is termed as \_\_\_\_\_. (CO5)
- Q.13 The end point of wing rail with lead rail is known as \_\_\_\_\_. (CO9)
- Q.14 \_\_\_\_\_ is the frictional resistance of the surrounding soil on the outer surface of steining of wells. (CO15)
- Q.15 The bearings of \_\_\_\_\_ is to be coated with oil from time to time. (CO18)
- Q.16 Drift method of tunneling is used to construct tunnels in \_\_\_\_\_. (CO19)
- Q.17 \_\_\_\_\_ section of tunnel is not suitable for placement of concrete lining. (CO20)
- Q.18 \_\_\_\_\_ is the operation of loading the rock, earth and any other excavated material? (CO20)
- Q.19 Orange lights are usually found at the beginning of the tunnel, called the \_\_\_\_\_. (CO23)
- Q.20 The art to keep the tunnels free from water during and after the construction operations is called \_\_\_\_\_.(CO22)

## **SECTION-C**

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 What are the factors which affect the rail route? (CO2)
- Q.22 Name the different types of rail gauges used in our country. Explain any one of them. (CO4)
- Q.23 What are the advantages of bearing plates? (CO6)
- Q.24 Write any five function of ballast. (CO8)

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- Q.25 What is the necessity of points and crossings on railways. (CO9)
- Q.26 Why maintenance of railways track is necessary.(CO10)
- Q.27 Write a short note on “Requirements of Drainage system” in railway tracks. (CO11)
- Q.28 What is the difference between bridge and culvert? (Co13)
- Q.29 Write the advantages of RUB. (CO14)
- Q.30 Enlist the various criterions used for the classification of bridges. (CO14)
- Q.31 What are the problems arises during the sinking of well foundations? (CO15)
- Q.32 Write down the functions of wing walls provided in a bridge. (CO16)
- Q.33 Describe the working os elastomeric bearings. (CO17)
- Q.34 Write a short note on routine maintenance ofbridges. (Co18)
- Q.35 Write down the functions of a station in railways. (CO12)

## **SECTION-D**

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Explain with the help of a diagram the working of RCC sleepers and also write their advantages and disadvantages. (CO7)
- Q.37 What are the factors which affect the site selection of a bridge? Explain any two of them in detail. (CO14)
- Q.38 a) Explain the working of abutments with return wing walls. (CO16)  
b) Write a short note on ventilation by exhaust. (CO21)

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