

No. of Printed Pages : 4

180753/030753/743

Roll No. ....

**5th Sem / Civil, Constr. Mgmt., Civil Engg  
(Spl Highway Engg)**

**Subject:- Railways, Bridges and Tunnels**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

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

- Q.1 The side slope of embankment for a railway track is generally taken as \_\_\_\_\_  
a) 1:1                                      b) 2:1  
c) 1.5:1                                    d) 1:2
- Q.2 The clear gauge distance between two rails of narrow gauge is \_\_\_\_\_  
a) 1000 mm                                b) 662 mm  
c) 676 mm                                 d) 762 mm
- Q.3 The wing walls constructed at 45° to the abutments are known as \_\_\_\_\_  
a) Straight wing wall    b) Splayed wing well  
c) Return wing wall    d) Inclined Wing Wall
- Q.4 The intermediate supports of a bridge super structure are known as \_\_\_\_\_  
a) piers                                      b) Abutments  
c) Foundation                             d) None of these
- Q.5 Bearings are provided in the bridges to allow free movement of the \_\_\_\_\_ without any difficulty.  
a) Girder                                    b) Piers  
c) Abutment                                d) End supports

(1) 180753/030753/743

Q.6 Drifters can be used to drill \_\_\_\_\_

- a) Only up holes  
b) Horizontal and up holes  
c) Only down holes  
d) Horizontal, down and up holes

Q.7 Which of the following lining material is useful for shield driven tunnels in sub aqueous region?

- a) Stone masonry                      b) Cast iron  
c) Timber                                d) Cement concrete

Q.8 The permanent drainage in a tunnel system is affected by \_\_\_\_\_

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

Q.9 The suitable tunneling method used for laying under-ground sewer is \_\_\_\_\_

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

Q.10 Propulsion method of ventilation is also known as \_\_\_\_\_

- a) Circulation Method    b) Exhausting method  
c) Blowing Method        d) None of the above

**SECTION-B**

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 The railways provided at elevated portion, above the ground surface are called \_\_\_\_\_ (Surface railways/ Elevated railways)
- Q.12 An outward slope of 1:20 to the head of wheels of rolling stock is termed as ( coning of wheels / Tilting of rails)

(2) 180753/030753/743

- Q.13 The angle between the running faces of point rail and splice rail at a crossing is known as \_\_\_\_\_ ( Angle of crossing / Toe of crossing)
- Q.14 For deciding the \_\_\_\_\_ of well foundation grip length must be considered as per IRC recommendation. (Width/ Depth)
- Q.15 The suitable pitching is to be provided to the \_\_\_\_\_ near bridges. (Deck slab / Embankment)
- Q.16 Drift method of tunneling is used to construct tunnels in \_\_\_\_\_ ( Rocks / Loose soil)
- Q.17 Removal of loose rock fragments and hammering off projecting pointed rock is known as \_\_\_\_\_ (Mucking / Scaling)
- Q.18 Circular section of tunnel is \_\_\_\_\_ for placement of concrete lining. (Suitable / Not Suitable)
- Q.19 The art to keep the tunnels \_\_\_\_\_ during and after the construction operations is called drainage of tunnels. (Free from water / full of water)
- Q.20 Orange lights are usually found at the beginning of the tunnel, called the \_\_\_\_\_ (Threshold zone / Dark zone)

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Write the various factors influencing the railway route and describe any one of them.
- Q.22 Providing the uniform system of gauge in railway track; is always advantageous to a country, describe the reasons for this.
- Q.23 Write down the functions of rail fastenings.
- Q.24 Write the requirements (any five) for material to be good ballast.

- Q.25 Describe the working of “Diamond crossing” with a neat sketch.
- Q.26 Write the various advantages of maintenance of a railway track.
- Q.27 Write a short note on “Requirements of Drainage System” in railway tracks.
- Q.28 Write the various points of differences between a bridge and a culvert.
- Q.29 Write the disadvantages of ROB.
- Q.30 Write down the classification of bridges according to their structural form.
- Q.31 Describe the problems arise during the sinking of a well foundation.
- Q.32 Write down the functions of pier’s provided in a bridge.
- Q.33 Describe the working of fixed plate bearings, used in bridges.
- Q.34 Write the various points to be taken into consideration during the “Inspection of Bridges” required for their maintenance.
- Q.35 write a short note on ventilation of tunnels.

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Enlist the various types of sleepers and explain any one of them along with its five advantages and disadvantages.
- Q.37 a) Describe the purpose of providing the yards in railways stations.  
b) Explain the working of abutments with splayed wing walls.
- Q.38 Explain the functions of various components of a bridge.