Total No. of printed pages = 7

CT-501/CT/5th Sem/2017/N

CONSTRUCTION TECHNOLOGY

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

PART – A

Question No. 1 is compulsory.

1. Answer the following : 1×25= 25

   (i) The road surface should be

   (a) Impervious

   (b) Durable

   (c) Stable

   (d) All of the above

(ii) The roads connecting villages with the towns or cities are classified as

(a) Major district road

(b) State highway

(c) Minor district road

(d) Village road

(iii) The main advantage of long rail over short rail is

(a) It requires less number of rail fastenings

(b) It provides smooth running of train

(c) Low maintenance cost

(d) All of the above

(iv) Slab culverts are suitable for maximum span of

(a) 3m (b) 6m

(c) 9m (d) 12m

(v) A pier is an ———— supporting structure of a bridge.

(vi) At the bridge site, the width of the river should be ————.

(vii) Walls constructed on both sides of the abutments are called ————.

(viii) What is meant by stock rail ?

(ix) What is the function of fish plate ?

(x) The main aim of providing a camber is ————.

(xi) The space on both sides of the roadways provided to protect the road is known as ————.

(xii) What do you mean by seal coat ?

(xiii) The parking lanes are provided on

(a) National highway (b) Urban roads

(c) State highways (d) On all roads

(xiv) Which of the following statement is not correct ?

(a) In slab culvert, a RCC slab is simply supported over abutment.

(b) A box culvert is constructed of RCC with one or more box casted monolithically.

(c) In a box culvert a pipe is fitted to drain off water.

(d) Arch culverts are culverts having its superstructure consisting of one or two arches.

(xv) Curb is the _____ part of a well.

(xvi) Wing-walls constructed at an acute angle is called _____ wing-walls.

(xvii) Bridge constructed at some other angle to the flow of water is called _____.

(xviii) Track geometrics include

(a) Cross-sectional elements

(b) Curves

(c) Gradients

(d) All of the above

(xix) The top width of a track embankment is known as

(a) Right of way

(b) Formation width

(c) Subgrade

(d) None of the above.

(xx) Super elevation is provided to introduce _____ force to counteract the tendency of the centrifugal force.

(xxi) Spacing of sleeper depends on

(a) Axle load and speed

(b) Type and section of rails

(c) Type of ballast

(d) All of the above.

(xxii) Which of the rail are mostly used in railway track ?

(a) Double head rail

(b) Bull head rail

(c) Flat footed rail

(d) None of the above.

(xxiii) In India the width of narrow gauge is

(a) 1.676 m (b) 1.0 m

(c) 0.762 m (d) 0.610 m.

(xxiv) The process of ramming the ballast underneath the sleeper is known as _____.

(xxv) The tapered movable rail which is attached at or near one end of a running rails is called _____.

PART – B

Attempt any *three* from question No. 2 to question No. 5 and question No.6 is compulsory.

2. (a) Explain the construction procedure of roads by cement concrete slab method. 6

   (b) What do you understand by rigid pavement and flexible pavement ? 4

3. (a) What are the factors to be considered while selecting site for a bridge ? 5

   (b) With a neat sketch explain T-beam and slab bridge. 5

4. (a) Distinguish between canal and aqueduct ? 5

   (b) What are the merits and demerits of concrete sleepers ? 5

5. (a) With neat sketches, explain the various types of culverts. 8

   (b) What do you understand by road geometrics ? 2

6. Write short notes on any *three* : 3×5=15

   (a) Causes of failure of weir

   (b) Ideal requirements of rail joints

   (c) Bituminous macadam

   (d) Good physical properties of ballast.