

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

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- (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* :  $3 \times 5 = 15$

- (a) Causes of failure of weir
- (b) Ideal requirements of rail joints
- (c) Bituminous macadam
- (d) Good physical properties of ballast.