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## **5th Sem / Civil, Constr. Mgmt., Civil Engg (Spl Highway Engg) Subject:- Highway Engineering**

Time : 3Hrs. M.M. : 100

## **SECTION-A**

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

- Q.1 The organization meant for developing roads in the country are

  - a) IRC
  - b) CRRI
  - c) NHAI
  - d) All the above

Q.2 Carriageway and shoulders combined together is known as

  - a) Formation width
  - b) Right of Way
  - c) Road Margin
  - d) Gradient

Q.3 The gradient which should never be exceeded in road construction is

  - a) Ruling gradient
  - b) Limiting gradient
  - c) Minimum gradient
  - d) Exceptional gradient

Q.4 Road should cross railway line and river at

  - a)  $30^\circ$
  - b)  $60^\circ$
  - c)  $90^\circ$
  - d)  $45^\circ$

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- Q.5 The test used to determine the toughness of road aggregate is

  - a) abrasion test
  - b) Impact test
  - c) Crushing value test
  - d) CBR Test

Q.6 Banks of surplus earth dumped on the road side parallel to its alignment are called

  - a) Camber
  - b) Borrow Pit
  - c) Spoil Banks
  - d) Embankment

Q.7 The walls constructed on the up-slope side of the hill road to prevent the same from sliding down are called

  - a) Breast Wall
  - b) Retaining wall
  - c) Parapet Wall
  - d) Catch pit

Q.8 The machine used for digging trenches

  - a) Dragline
  - b) Back Hoe
  - c) Shovels
  - d) Dozers

Q.9 A closed building structure to hold aircraft is called

  - a) Apron
  - b) Airdrome
  - c) Glider
  - d) Hanger

Q.10 Trucks whose contents can be emptied without handling are called

  - a) Dumpers
  - b) Tractors
  - c) Tippers
  - d) Pavers

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## **SECTION-B**

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

Q.11 CRRI means \_\_\_\_\_.

Q.12 The convexity provided to road surface in highway engineering is termed as \_\_\_\_\_.

Q.13 \_\_\_\_\_ map shows the contours of the area.

Q.14 80/100 grade bitumen indicates the \_\_\_\_\_ lies between 80 and 100.

Q.15 The process of load transfer from one slab to the other is carried across the transverse joint by \_\_\_\_\_.

Q.16 The hill road meant for pedestrians, mules, camels etc. are known as \_\_\_\_\_.

Q.17 The process of removing and controlling surface and subsoil water within the right of way of a road is called \_\_\_\_\_.

Q.18 Formation of pot holes is the most common failure occurring in \_\_\_\_\_.

Q.19 A machine having long crane boom but efficiency less than power shovel is \_\_\_\_\_.

Q.20 \_\_\_\_\_ is a paved landing strip for landing and take-off of planes.

## **SECTION-C**

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

Q.21 Define IRC. What are its functions?

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Q.22 Define camber. What are the objects of providing camber?

Q.23 Define superelevation and extra widening.

Q.24 What is transition curve and reverse curve

Q.25 What are the factors to be considered while governing the alignment for a road in plain areas?

Q.26 Compare bitumen and Tar.

Q.27 How will you conduct the Los Angeles Abrasion test for road aggregate.

Q.28 Explain merits and demerits of flexible pavement.

Q.29 Draw the cross section of WBM road.

Q.30 Define landslides. What are the causes of landslides?

Q.31 What are the common types of road failures of flexible pavement?

Q.32 Differentiate between Dragline and Power Showel.

Q.33 Explain the necessity of studying airport engineering

Q.34 Explain alternate bay method of road construction.

Q.35 Define tie bar and dowel bar.

## **SECTION-D**

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

Q.36 Write the construction steps for laying of cement concrete roads.

Q.37 What are the various factors to be considered for selecting a site for an airport with respect to zoning laws?

Q.38 Draw the typical x-section of national highway in cutting and in embankment.

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