T-E Civil V CBGS
Transportation Engg -I

03-12-2016
Q.P. Code : 577000

(3 Hours)   Total Marks : 80

Note :1. **Q.1** is **compulsory.** Attempt any 3 out of the remaining questions.
  2. **All** questions carry **equal (20) marks**
  3. Figures to the right indicate marks
  4. Attempt sub questions in order

1. Answer briefly. **Each** question carries **04 marks.**   20
  a) List five major ports and five international airports in India.
  b) Define breakwater. Enlist its types.
  c) Point out the difference between: i) Junction and terminus
    ii) Point and crossing
  d) Explain VASI & PAPI.
  e) What special care has to be taken while constructing railway in marshy areas?

2. a) A $9°$ branch curve diverges out from a$8°$ main curve in an opposite direction   8
  in a MG yardlayout. If the speed on main line is restricted to 25 kmph, what
  would be the speed limit on branch line provided permissible deficiency is
  5.1 cm.
 b) Write a detailed note on Taxiway marking and lighting.   8
 c) Which organizations may employ you after gaining the knowledge of this   4
  subject?

3. a) Calculate all the elements of a turnout on B.G track if N=8.5, d=13.3cm &angle   10
  of switch is $1° 8' 0"$.
 b) Write a note on (Any one) i) JNPT ii) Kandla port.   6
 c) What are the advantages of constructing railway on embankment?   4

4. a) If the basic runway length for an airport situated at an elevation of 180 metre   10
  is 800 metres, Find the actual runway length required if mean of average daily
  temperature and mean of maximum daily temperature is obtained as 36°C and
  42°C respectively. Assume the effective gradient of 2% on the runway.
 b) Explain zoning laws for an airport.   6
 c) List the various projects going on and planned to make rail commute in Mumbai   4
  easier.

5. a) Design an Exit Taxiway which joins a Runway and main parallel Taxiway   8
  with following data: Total angle of turning = 40°, Turning speed =75 kmph,
  Coefficient of friction =0.12, Radius of curvature= 750 metres.
 b) Write notes on: i) Turning radius of an aircraft.   12
      ii) Three controls of aircraft.
      iii) Facilities to be provided at an airport terminal.

[TURN OVER]

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6. a) Define Interlocking and explain the principle of interlocking. Describe   10
   the various mechanical devices used for Interlocking

   b) State: i) Location of only diamond crossing in India.   10
       ii) Name of any 4 cities in India where local train service is
            provided.
       iii) Facilities provided at a harbour.
       iv) Length of runway of airport in Mumbai
       v)   Train in India having longest running distance.