

**RVK/KW/13/3256/3589**

**Faculty of Engineering & Technology**

**Eighth Semester B.E. (Civil)/Eighth Semester**

**B.E.P.T. (Civil) Examination**

**TRANSPORTING ENGINEERING—II**

**Sections—A & B**

Time : 3 Hours]

[Maximum Marks : 80

**INSTRUCTIONS TO CANDIDATES**

- (1) All questions carry marks as indicated.
- (2) Answer **THREE** questions from Section A and **THREE** questions from Section B.
- (3) Assume suitable data wherever necessary.
- (4) Diagrams and equations should be given wherever necessary.
- (5) Illustrate your answers wherever necessary with the help of neat sketches.
- (6) Use of non-programmable calculators and Drawing instruments is permitted.

**SECTION—A**

1. (a) Discuss the various types of rail failures with sketches. 7

9. (a) Describe the ways of providing effective drainage during and after the construction of a tunnel. 7

- (b) What is the object of providing lining to tunnel interior ? Discuss in brief. 6

10. Write notes on (any **Three**) :—

- (i) Wind coverage 4
- (ii) Apron 4
- (iii) Tunnel ventilation 5
- (iv) Need of Air Traffic Control 5
- (v) Twin Tunnel. 4

- (b) Discuss the necessity and effects of coning of wheel and tilting of rails. 6
2. (a) What do you understand by a transition curve ? What are the objects of providing a transition curve ? 6
- (b) A 5 degree curve diverges from a 3 degree main curve in reverse direction in the layout of a B.G. yards. If the speed on the branch line is restricted to 40 Km/h, determine the restricted speed on the main line. 7
3. (a) Derive the relationship of superelevation with gauge, speed and radius of a curve. 6
- (b) A locomotive with four pairs of driving wheels is required to haul a train at a speed of 80 Km/h. The train has to run on a straight level track with an axle load of driving wheels of the engine as 24 tonnes, calculate the maximum permissible load that can be pulled by the engine.
- If the train has to ascend a slope of 1 in 200, then what would be reduction in speed ? 7
4. (a) Draw a neat diagram of left-hand turn-out and show its various component parts. 6
- (b) Determine all the necessary elements required to set out a 1 in 8.5 turnout which takes off from a B.G. track with its curve starting from the toe of switch and passes from theoretical nose of crossing. Given heel divergence = 11.42 cm. 7

5. Write notes on (any Three) :—

- (i) Marshalling Yard 4
- (ii) Types of crossings 4
- (iii) Heel divergence 5
- (iv) Co-acting signal 5
- (v) Types of gradient 4

### SECTION—B

6. (a) Discuss the various factors which are to be considered while selecting a suitable site for an airport. 6
- (b) Name the different characteristics of aircraft. How do they affect the planning and design of airport ? 7
7. (a) What do you understand by terminal area ? What facilities are provided in this area ? 6
- (b) The length of runway under standard conditions is 1720m. The airport is to be provided at an elevation of 300 m above the MSL. The airport reference temperature is 32°. If the effective gradient is 0.15%, determine the corrected runway length. 7
8. (a) Explain the procedure of orienting the runway. 6
- (b) What are different systems of aircraft parking ? Explain one with neat sketch. 7