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RA  
Reg. No.....  
Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

Branch : Civil Engineering

CE 010 604 – TRANSPORTATION ENGINEERING – I (CE)

(New Scheme – 2010 Admission onwards)

[Regular/Improvement/Supplementary]



Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Missing data, if any, may suitably be assumed.*

*Each question carries 3 marks.*

1. State the requirements of a good ballast material.
2. What are the functions of interlocking?
3. What are the factors which govern the suitable shape for tunnels?
4. Classify the different types of breakwaters.
5. Write a note on dipper dredger.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain Pusher and Momentum gradients.
7. What are the factors to be considered in the design of Marshalling yard?
8. Mention the circumstances under which a railway track is laid through a tunnel.
9. Mention the essential features of a Transit shed.
10. Explain the functions of Jetties and Dry dock.

(5 × 5 = 25 marks)

Turn over

**Part C**

Answer all questions.

Each question carries 12 marks.

11. State the objectives of providing transition curve and essential requirements of an ideal transition curve.

Or

12. What do you understand by (i) Equilibrium cant ; (ii) Cant deficiency ; and (iii) Grade compensation on curves.
13. What are the classification of signals based on operation and special characteristics? Explain the method of centralized traffic control system of control on the movement of train. Mention its advantages.

Or

14. Explain the working principle of Absolute Block System. What way it differ from Automatic Block System?
15. State and describe the various methods adopted in tunnelling in rocky strata.

Or

16. What is the importance of ventilation in tunnelling? Describe the various methods of ventilation with their advantages and disadvantages.
17. (a) Explain the classification of harbours giving suitable sketches. Mention the advantages and disadvantages of each.
- (b) Distinguish between Quay and Wharf.

(7 + 5 = 12 marks)

Or

18. What are navigational aids? Explain any *three* navigational aids.
19. (a) What is a "slipway"? Discuss the design considerations of a slipway.
- (b) Determine the length of a slipway and pull required to lift a tug with the following data :
- (i) Length of tug = 32 m. ; (ii) Draft = 3 m. ; (iii)  $C = 4$ .
- (iv) Weight of tug = 60 ton, the height from rail level to top of block = 0.8 m
- (v) Weight of cradle = 6.5 ton, Inclination of slipway to the horizontal =  $3^\circ 45'$

(7 + 5 = 12 marks)

Or

20. (a) List the forces acting on a gravity dock and explain the scheme of constructing it.
- (b) Distinguish between ladder dredger and hydraulic dredger.

(8 + 4 = 12 marks)

[5 × 12 = 60 marks]