

BITT POLYTECHNIC Ranchi-835217
Department of Electrical Engineering

Sub:- Traction

Sem- 5th (EE)

A. Objectives questions

1. Which of the following is an advantage of electric traction over other methods of traction ?

- (a) Faster acceleration
- (b) No pollution problems
- (c) Better braking action
- (d) All of the above

2. Which of the following is the voltage for single phase A.C. system ?

- (a) 22 V
- (b) 440 V
- (c) 5 kV
- (d) 15 kV
- (e) None of the above

3. Long distance railways use which of the following ?

- (a) 200 V D.C.
- (b) 25 kV single phase A.C.
- (c) 25 kV two phase A.C.
- (d) 25 kV three phase A.C.

4. The speed of a superfast train is

- (a) 60 kmph
- (b) 75 kmph
- (c) 100 kmph
- (d) more than 100 kmph

5. Main traction systems used in India are, those using

- (a) electric locomotives
- (b) diesel engine locomotives
- (c) steam engine locomotives
- (d) diesel electric locomotives
- (e) all of the above

6. in India diesel locomotives are manufactured at

- (a) Ajmer
- (b) Varanasi

- (c) Bangalore
- (d) Jamalpur

7. For diesel locomotives the range of horsepower is

- (a) 50 to 200
- (b) 500 to 1000
- (c) 1500 to 2500
- (d) 3000 to 5000

8. _____ locomotive has the highest operational availability.

- (a) Electric
- (b) Diesel
- (c) Steam

9. The horsepower of steam locomotives is

- (a) up to 1500
- (b) 1500 to 2000
- (c) 2000 to 3000
- (d) 3000 to 4000

10. In tramways which of the following motors is used ?

- (a) D.C. shunt motor
- (b) D.C. series motor
- (c) A.C. three phase motor
- (d) AC. single phase capacitor start motor

B. Short Answer Types questions

1. What do you mean by Electric traction?
2. What are the various types of Electric Traction?
Answer:-
3. What are Characteristics of good traction system?
4. What are the disadvantages Electric traction over other types of system?
5. What is Diesel Engine Electric Traction?
6. Write the Advantages and disadvantages of Steam Engine Drive.
7. What are the Various system of track Electrification?
8. Write short notes on the Single phase low frequency system for Track electrification.
9. Explain in details the various merits and demerits of electric traction system.
10. Explain the various types of train service.

C. Long Answer Types Questions

11. Define

a) Acceleration b) Crest speed c) Average speed d) Schedule speed e) Costing.

12. Describe the features (Electrical and Mechanical) of Traction Motor.

13. Explain Significance of D.C. series motor over D.C. Shunt motor.

14. Describe linear induction motor. Give the advantages and disadvantages of Linear Induction Motor.

15. Explain different types of electric braking system

Solution:

A. Objectives questions

1. a

2. a

3. b

4. d

5. e

6. b

7. c

8. a

9. a

10. b