

INTEGRAL COACH FACTORY::CHENNAI-38

Question Paper for selection of Assistant Electrical Engineer through Limited
Departmental Competitive Examination.

PAPER – II

Date: 09-09-08

Time: 3 hrs.
Max. Marks: 150

Part A carries 100 marks and Part B carries 50 marks:

PART – A

Answer any four questions. Each question carries 25 marks.

1. (a) Describe the procedure for commissioning of 3 Ph. AC DC EMUs equipped with Siemens Electrics. (15)
(b) List out the major equipments in the power circuit of 3 Ph. AC DC EMUs with Siemens Electrics when connected to 25 kV Single Phase supply and explain the function of the equipments briefly. (10)
2. (a) What steps are being taken in the air-conditioning of coaches to make them environmentally friendly in accordance to the decisions taken in the Kyoto protocol? (10)
(b) Draw the schematic for power supply feeding arrangement for lights, fans and air-conditioning equipments in the case of end-on generation system (15)
3. (a) Draw the lay-out of a power supply arrangement of the Furnishing Division of ICF. (15)
(b) What are the various protective arrangements for a transformer ? Explain the functioning of a buchholz relay. (10)
4. (a) Draw the schematic of the Bogie used in the AC DC EMUs and explain how the tractive effort is transmitted from the bogie to the body ? (15)
(b) What are the various types of suspensions used in the secondary suspension and primary suspension? (10)

5. Write short notes on any three of the following:

- (a) Working of a 4.5 kW alternator
- (b) Working of a 4 stroke engine
- (c) Refrigeration cycle
- (d) Various types of brakes used in a electric locomotive
- (e) Working of BLDC fans.

6. Write short notes on any four of the following:

- (a) Vertical turbine pump
- (b) Head-on-generation system for train lighting & air-conditioning
- (c) Maintenance schedule for transformer
- (d) Anti-collision protection for EOT cranes.
- (e) Initial charging of train lighting cell.
- (f) Power factor improvement

PART – B

Answer any two questions. Each question carries 25 marks.

1. What are the various types of tenders in the Railways ? Discuss the role of Executive and Accounts officer in the Tender Committee.
2. What are the sources from which Railway expenditure is financed ? Discuss the general principles of allocation of expenditure to these sources.
3. Write short notes on any three of the following:

- (a) Workmen's Compensation Act
- (b) Performance Budgeting
- (c) Factories Act
- (d) Retirement Benefits
- (e) Canons of Financial Propriety

4. What do you understand by HOER ? How is the classification of employees done under HOER ? What are the various classifications of EIW & IW.