

TWO YEARS TRAINING PROGRAMME OF PROB. AEEs.

1. Foundation Training at RTA/CTG.	18 Weeks.	
2. Training at BPATC/Savar/Dhaka	17	" 2½
3. Field Training:		
a. At CEE/CRB & RJHT's office	8	"
b. At Bholagonj Rope way at CTB	2	"
c. Under DEE/CTG, DA, PXC & LMH	16	"
d. At power house, GER Shop, TL Shop AC-Shop and Workshop Maintenance at PHT/SDP	12	"
e. In Control office CTG/DA/PXC/LMH	4	"
f. At Planning office	3	"
g. At CCS/PHT office	6	"
h. At COPS office	2	"
i. At CCM office	1	"
j. At CME's office	2	"
k. At CMO's office	1	"
l. At CSTE office	2	"
m. At CE's office	2	"
n. At FA & CAO's office	2	"
4. Final Training at RTA/CTG	6	"
		Total 104 Weeks
		= 2 Years.

SYLLABUS OF PROB. AEE'S FOUNDATION/PROMOTION COURSE.

Duration – 18 Weeks

A: Electrical – 200 Marks.

(a) Paper- I (Power) : 100 Marks

1. Generating plant: Classification of Plants, Principle & function of their prime mover.
2. Transmission and distribution system.
3. Transformer: Principle & function, types of transformer in railway use and efficiency.
4. Sub-station: Site selection, Layout & choice of equipment.
5. O.H. & U.G equipment, types of U.G cable & their uses and localization of cable fault.
6. Layout of power station, type of power stations, concerning plants and equipments with control gears.
7. Measuring instruments, types of measuring instruments and their uses.
8. Utilization of power.
9. Electric pump: Principle and function, type of pumps, uses and maintenance.
10. Earthing : Classification of earthing and its purposes.
11. Railway act, Indian Electricity Act and Safe working rule.
12. Disposal of Elec. bills.
13. Procedure for crossing of Rly. tracks by O.H. line & U.G Cables.
14. Planning & Designing: Yard Lighting, platform lighting, pump installation, station electrification, Services & residential buildings electrification and workshop lighting.

(b) Paper-II (TL & AC): 100 Marks.

Train Lighting (TL)

1. Brief description of Elec. equipment such as ^{alternator} Dynamo/rectifier/diode, battery, over-voltage relay, overcharge relay, lamp resistance, lamp resistance relay, switch & fuse panel etc. and their function illustrating circuit diagram.
2. Wiring diagram.
3. Causes of lighting failure and their remedial.
4. General maintenance of TL equipment.
5. Safety in Train operation.

Air-Conditioning (AC):

1. Theory & practice of Air conditioning in Rolling stock.
2. Types of AC Coaches and their differences.
3. Wiring diagram.
4. Details of AC & Elec. equipment in AC Coaches.
5. Nature of defects arises in AC Coaches on run.
6. Air Cooler & Water cooler.
7. Refrigerator.

B: GENERAL PAPER

-100 Marks.

See General Syllabus A, C, D, E, G, H, I, J, K, L.

C: Physical Training, First Aid & Civil Defence-100 Marks.

D: Viva – voice Test-100 Marks.

SYLLABUS FOR AEE's FINAL COURSE

Duration: 6 Weeks

A: Electrical - 1st paper - 100 marks.

Electrical - 400 Marks.

1. Generators & Motors- Principle of operation, Maintenance, common defects.
3. Transformer:
 - a. Different Types of Transformers.
 - b. Parallel operation of Transformers.
 - c. Maintenance of Transformers.
3. Pumps:
 - a. Types of pumps, (Maintenance of different types of pumps).
 - b. Trouble shooting.
4. Distribution of Electrical Energy:
 - a. Overhead And Underground transmission
 - b. Advantage and & disadvantages of different types of Transmission.
 - c. Maintenance of Transmission lines.
 - d. Trouble Shooting.
4. Power Stations & Sub-station Maintenance of Sub-Station equipment.

Electrical - 2nd paper

- 100 marks

6. Train Lighting
 - a) Conventional System
 - b) MOG System & EOG System
 - c) Operation & Maintenance of different types of Train lighting equipment.
 - d) Trouble Shooting.
 7. Air Conditioning & Refrigeration
 - a) Familiarisation with different types of Air-conditioning system.
 - b) Present air-Conditioning system in Railway Coaches.
 - c) Maintenance & Repair of A.C Coaches.
 - d) Water-Coolers & Refrigeration's.
 8. Duties & responsibilities of SAE, SSAE, AEE, DEE & CEE.
 9. Revenue Expenditure- Idea about different heads of Revenue expenditure of Electrical Deptt.
 10. Preparation of Estimates.
- B: PROJECT PLANNING & MANAGEMENT - 100 Marks.
- (a)
 - 1) Project Planning concept, Objectives, elements, cycles with reference to Bangladesh.
 - 2) Stage of project preparation.
 - 3) Project financing and fund release
 - 4) Project Pro-forma
 - 5) Project Implementation and Evaluations
 - 6) Cost Benefit Analysis.
 - (b)
 - i) Management: Theory and Practice.
 - ii) Group and Inter personal skills development
 - iii) Personnel Management.
 - iv) Industrial Relation.
 - v) Functional areas of Management.
 - vi) Financial Management.
- C: Viva-Voce Test - 100 Marks.

FOR PROB. SAE/SSAE ELEC. FOUNDATION/REFRESHER COURSE

Duration- Foundation- 18 Weeks

Refresher- 5 Weeks. →

– 200 Marks.

A: ELECTRICAL :

a. Paper-I (Power): 100 Marks.

- 1) Generating Plant: Classification, Principles & Function of each type, nature of common defects and remedies.
- 2) Transformers- Principle function use of different types of transformer/transformers losses and efficiency.
- 3) Sub-Station- Site selection, choice of equipment, layout drawing.
- 4) Transmission- Site selection system.
- 5) Laying of O.H line & U.G. Cables types of UG cables and uses including maintenance and periodical OVH.
- 6) Elec. Pump Principle and function of Each type of pump in use and selection of pump.
- 7) Earthing- Classification and purpose.
- 8) Indian Elec. Act. & Electrical safe working Rules.
- 9) Elec. machines (AC/DC motors & generator) – Principles and application.
10. Measuring instruments as used in Bangladesh Railway.
11. Illumination (Internal-External- δ) maintenance & periodical OVH
12. Crossing of Rly. Track by Elec. OH line UG Cable.
13. Disposal of Elec. bills.
14. Maintenance of Elec. Plants, machineries & equipment including periodical OVH.

b) Paper-II, (T.L. & A.C)

100 Marks.

Train Lighting:

1. Dynamo & alternator with their allied controlling switch/gears function, defects and remedies including daily maintenance and periodical OVH.
2. Maintenance and treatment of Acid Alkaline battery.
3. Wiring diagram of T.L system, installation of lamps and fans and their operation and maintenance.

Air Conditioning

1. Diagram of A C Units used in passenger coaches, function, defects of their equipments and remedies including daily maintenance and periodical OVH.
2. Refrigeration Cycle and its application in Air Cooler, water Cooler and Refrigerator including maintenance problems and remedies thereof.

B: GENERAL PAPER

– 100 Marks.

C: General Syllabus A, B, C, D, E, G, H, I, J, K, L.

D: Physical Training, First Aid & Civil Defence

– 100 Marks.

E: Viva- Voce

– 100 Marks.

SYLLABUS FOR LINE ELECTRICIAN'S FOUNDATION COURSE

Duration : 7 Weeks

-100 Marks

A: ELECTRICAL (Theory)

1. Electricity Kinds & uses
2. Idea about train Lighting
3. Provision of Lights & fans in Train
4. Five wire block & three Wire systems and their differences.
5. Axle pulley and its Alignment.
6. Dynamo belt with fastner
7. Suspension Link.
8. Generator (A.C & D.C)
9. Blocking Diode & rectifier.
10. Over voltage & over charge reliever
11. Battery and its fuse , maintenance and treatment.
12. Lamp resistance & lamp resistance relay.
13. Switch & fuse panel.
14. Slide lock fuse .
15. Wiring.
16. Couplers (Plug & Socket).
17. Light Fitting & Switch.
18. Fan with bracket , resistance & regulator.
19. Mid on Generator (MOG).
20. Duties of LE Mistry, SAE & SSAE.
21. Fire accident.
22. Daily & quarterly Examination.
23. LE & POH.
24. Marshalling of rake.
25. Idea about tools.
26. Idea about air-cooler, water -cooler, Refrigerators, Diesel Generator set, battery charging set, Switch gear and safety working rule.

B: Workshop attachment (train lighting) : practical -100 marks

C: Physical Training, First Aid & Civil Defence-100 Marks.

-7 weeks

SYLLABUS FOR FA & SBA /POWER CAR DRIVER SPECIAL COURSE.

Duration: 5 Weeks.

A Departmental paper (Theory) -100 Marks.

1. Diesel Engine-Types, function, maintenance.
2. Electricity - Type & uses.
3. Generator, Types, function, maintenance
4. Transformer - Function , maintenance, defects & remedies
5. Panel board and its parts, maintenance, defects & remedies.
6. Isolator, Circuit breaker, relay, main switch.
7. Preparation of log sheet.
8. Maintenance of Diary.
9. Elec. safe working Rules.
10. Measuring instruments.
11. Duty & responsibility of FA & SBA /Power car driver, Mistry , Lineman, SAE & SSAE.
12. Important works to be done before starting & after starting engine.
13. Action to be taken when Elec. accident occurs.
14. Earthing & its utility.
15. Idea about different Tools.
16. Battery - type ,maintenance, treatment, defects & remedies,

B. Workshop attachment (G.E.R shop) : Practical

100 Marks

Physical Training, First Aid & civil Defence 1

- 100 Marks.