

**2. Electrical Technology (FA, FB, FC)**  
**Instructions to the Head of the Institute**

1. The programme of the practical examination is to be finalized and notified on the notice board by the Head of the Institute in accordance with the instructions regarding the conduct of the examinations laid down by the Divisional Board.
2. In case the external examiner fails to report or inform the Head of the Institute one day prior to the commencement of the examination, the Head of the Institute, is authorised to make the necessary emergency appointment in his place and inform the Divisional Board accordingly.
3. The Head of the Institute should see that proper arrangements (Lab. Accommodation and Equipments as per HSC Board Syllabus) are made for conducting the practical examination in consultation with the internal examiner.
4. The Head of the Institute should immediately hand over the packet of related documents received from H.S.C. Board office to the examiners concerned, before the exams..
5. The Head of the Institute should 'Immediately' display the 'Instructions to candidate' on proper notice board along with the time table.
6. Both the internal and external examiners will be appointed by the Divisional Board.
7. The following laboratory staff will be appointed for a batch of 12 students:
  - a) Expert Assistant (Instructor) - 1
  - b) Workshop / Laboratory Assistant - 1
  - c) Peon (Helper) - 1

The REMUNERATION of above staff will be paid as per the H.S.C. board rules.

**Electrical Technology (FA, FB, FC)**  
**Instructions to the Examiners and Scheme of Marking**

Experiment which have been conducted during the year should be kept for the practical examination . ( Minimum 75 % experiments of each paper).

2. The candidate should be given one experiment by lot system from each paper. Period of examination will be three hours for each paper. Change of experiment should be avoided as far as possible. However the internal examiner can change the allotted experiment in consultation with the external examiner, if the candidate has not performed and entered the allotted experiment in the journal.
3. Examiner should see that in a batch every candidate performs a different experiment.
4. Examiner should personally verify at every stage whether each sub-question in the given slip is answered or not.
5. The assessment of answer books and the conduct of practical examination will be done jointly by both the examiners.
6. In case of any dispute the decision of the external examiner shall be final.
7. The external examiner should check the journal and project work completed during the year by the candidate.
8. The marks for project, OJT and IV should be given by both external and internal examiner as per the marking scheme and given by the Board office.
9. For Paper - I (T4) any TEN experiments from the given list be set (A,B and atleast three from each section A & B)
10. For Paper - II (T5) any TEN experiments from the given list be set and atleast three from each section A & B)
11. For Paper -III (T6) any TEN experiments from the given list be set taking atleast THREE from each section (A, B).

7. Following scheme of marking should be followed
- |    |                  |          |     |          |
|----|------------------|----------|-----|----------|
| a) | Experiment       | 60 marks | --- | 80 marks |
|    | Oral             | 20 marks | --- |          |
| b) | Term Work        |          | --- | 10 marks |
| c) | Project          |          | --- | 10 marks |
| d) | O.J.T.           |          | --- | 10 marks |
| d) | Industrial visit |          | --- | 10 marks |

**Total Marks ( for each paper) 120 marks**

8. Scheme of Marking for assessment of O.J.T. work **10 marks**
9. Scheme of marking for assessment of Industrial Visit  
Industrial Visit Report **10 marks**

## **Electrical Technology (FA, FB, FC)**

### **Instructions to the Candidate**

1. Candidates should bring with them their certified journals, project report, O.J.T and IV reports with Concerned Certificates, project Hall Tickets, Tools etc.
2. All reports and journals should be certified by the Head of the Institution or Head of the Vocational Department with counter signature of practical incharge.
3. Candidates should remain present atleast 30 minutes before the commencement of the examination.
4. Candidates should read the slip carefully and answer all the questions in the slip.
5. List of components should necessarily include its type, tolerance, wattage, Voltage rating, current rating etc.
6. Use of log-tables is allowed. Use of Pocket calculator, Scientific calculator is not allowed.
7. In case of any difficulty, the candidate should approach the concerned examiner.
8. Switch on the circuit only after getting the connections checked by the examiner.
9. After finishing the experiment switch off the circuit / power supply / soldering iron etc.
10. Leave your table neat and clean.
11. Keep silence in the examination hall.

## XII Electrical Wiring (FA)

### Practical – 1 to 25

Sr. No.	List of Practicals -	Periods
1.	Demonstration on wiring with pvc channel	8
2.	Practice and concealed wiring	8
3.	Practice on surface wiring	8
4.	Measurement of Insulation resistance of wiring Insulation by using megger.	8
5.	Continuity and polarity test by using megger	8
6.	Bus bar MCBs, Elcbs, fuse and DB with cable, gland, fixing in wiring installation.	8
7.	3 phase load balancing	8
8.	3 phase energy meter installation	8
9.	Estimate the cost of material and labour charges required as per market rate.	12
10.	Site visit on installation of different wiring system for office/commercial complex/malls/bank/lodge/hospital.	12
11.	Study of protective device used in power supply and its function	8
12.	Practice on operation estimation and costing of materials and 8 accessories as per layout of industrial wiring	8
13.	Preparation of project report of electrical workshop/lab self performed	8
14.	Installation of DTH wiring	8
15.	Installation of CCTV wiring	8
16.	Installation of different chaser lighting circuit	8
17.	Workout measurement of a building or a shop and prepare the list of item for wiring.	12
18.	Prepare the list of item required for wiring with specification	8
	Visit to generation station and prepare detailed report. Visit to 33kv/132kv substation &	8
	Prepare detailed report. Visit 11Kv. 440v transformer (DP) and prepare detailed report	12
19.	Three Phase load balancing	8
20.	To study protective device in substation	8
21.	Circuit study installation and application of Illumination sources	8
22.	circuit study installation and application of mercury vapor lamp, sodium vapour lamp and metal halide lamp	8
23.	Circuit study, installation and application of LED based modern lighting fixtures and decoration lighting.	8
24.	Electrical interactive lecture workshop/lab self performed and one apartment and one commercial complex.	8
25.	Industrial visit (minimum Three visit)	12
	<b>Total</b>	240

**XII Electrical Technology Paper – I**  
**Sub : Electrical Wiring – (FA)**

**Time – 3 Hrs**

**Marks 80**

**Instruction**

- i) Each Batch have max 20 student
- ii) Separate Practical for Each group / student
- iii) Each group have 4 students

**Section A**

1.	<p><b>Demonstration on wiring with pvc channel</b></p> <p>a) Wiring diagram/constructional diagram - 15</p> <p>b) Tools equipments &amp; material with specification - 15</p> <p>c) Procedure - 15</p> <p>d) Connection, Testing conclusion - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;"><u>80</u></p>
2.	<p><b>Practice and concealed wiring</b></p> <p>a) Wiring diagram/constructional diagram - 15</p> <p>b) Tools equipments &amp; material with specification - 15</p> <p>c) Procedure - 15</p> <p>d) Connection, Testing conclusion - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;"><u>80</u></p>
3.	<p><b>Practice on surface wiring</b></p> <p>a) Wiring diagram/constructional diagram - 15</p> <p>b) Tools equipments &amp; material with specification - 15</p> <p>c) Procedure - 15</p> <p>d) Connection, Testing conclusion - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;"><u>80</u></p>
	<p><b>Measurement of Insulation resistance of wiring Insulation by using megger.</b></p> <p>a) Wiring diagram/constructional diagram - 15</p> <p>b) Tools equipments &amp; material with specification - 15</p> <p>c) Procedure - 15</p> <p>d) Connection, Testing conclusion - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;"><u>80</u></p>

5.	<p><b>Continuity and polarity test by using megger</b></p> <p>a) Wiring diagram/constructional diagram - 15  b) Tools equipments &amp; material with specification - 15  c) Procedure - 15  d) Connection, Testing conclusion - 15  e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
6.	<p><b>Bus bar MCBs, Elcbs, fuse and DB with cable, gland, fixing in wiring installation.</b></p> <p>a) Wiring diagram/constructional diagram - 15  b) Tools equipments &amp; material with specification - 15  c) Procedure - 15  d) Connection, Testing conclusion - 15  e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
7.	<p><b>3 phase load balancing</b></p> <p>a) Wiring diagram/constructional diagram - 15  b) Tools equipments &amp; material with specification - 15  c) Procedure - 15  d) Connection, Testing conclusion - 15  e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
8.	<p><b>3 phase energy meter installation</b></p> <p>a) Wiring diagram/constructional diagram - 15  b) Tools equipments &amp; material with specification - 15  c) Procedure - 15  d) Connection, Testing conclusion - 15  e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>

## Section B

9.	<p><b>Study of protective device used in power supply and its function</b></p> <p>a) Layout/Wiring diagram - 20            b) Material &amp; Tools - 10            c) Procedure - 10            d) Testing conclusion - 10            e) Workmanship - 10            f) Oral - 20  <u>80</u>            -----</p>
10.	<p><b>Practice on operation estimation and costing of materials and accessories as per layout of industrial wiring</b></p> <p>a) Layout/Wiring diagram - 20            b) Material &amp; Tools - 10            c) Procedure - 10            d) Testing conclusion - 10            e) Workmanship - 10            f) Oral - 20  <u>80</u>            -----</p>
11.	<p><b>Preparation of project report of electrical workshop/lab self performed</b></p> <p>a) Layout/Wiring diagram - 20            b) Material &amp; Tools - 10            c) Procedure - 10            d) Testing conclusion - 10            e) Workmanship - 10            f) Oral - 20  <u>80</u>            -----</p>
12.	<p><b>Installation of DTH wiring</b></p> <p>a) Layout/Wiring diagram - 20            b) Material &amp; Tools - 10            c) Procedure - 10            d) Testing conclusion - 10            e) Workmanship - 10            f) Oral - 20  <u>80</u>            -----</p>



13.	<b>Installation of CCTV wiring</b>	
	a) Layout/Wiring diagram	- 20
	b) Material & Tools	- 10
	c) Procedure	- 10
	d) Testing conclusion	- 10
	e) Workmanship	- 10
	f) Oral	- 20
		<u>80</u>
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14.	<b>Installation of different chaser lighting circuit</b>	
	a) Layout/Wiring diagram	- 20
	b) Material & Tools	- 10
	c) Procedure	- 10
	d) Testing conclusion	- 10
	e) Workmanship	- 10
	f) Oral	- 20
		<u>80</u>
		-----
15.	<b>Workout measurement of a building or a shop and prepare the list of item for wiring.</b>	
	a) Layout/Wiring diagram	- 20
	b) Material & Tools	- 10
	c) Procedure	- 10
	d) Testing conclusion	- 10
	e) Workmanship	- 10
	f) Oral	- 20
		<u>80</u>
		-----
16.	<b>Circuit study installation and application of Illumination sources</b>	
	a) Layout/Wiring diagram	- 20
	b) Material & Tools	- 10
	c) Procedure	- 10
	d) Testing conclusion	- 10
	e) Workmanship	- 10
	f) Oral	- 20
		<u>80</u>
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17.	<p><b>circuit study installation and application of mercury vapour lamp, sodium vapour lamp and metal halide lamp</b></p> <p>a) Layout/Wiring diagram - 20  b) Material &amp; Tools - 10  c) Procedure - 10  d) Testing conclusion - 10  e) Workmanship - 10  f) Oral - <u>20</u>  80  -----</p>
18.	<p><b>Circuit study, installation and application of LED based modern lighting fixtures and decoration lighting.</b></p> <p>a) Layout/Wiring diagram - 20  b) Material &amp; Tools - 10  c) Procedure - 10  d) Testing conclusion - 10  e) Workmanship - 10  f) Oral - <u>20</u>  80  -----</p>

## Practical – Electrical Appliances (FB)

### Practical – 1 to 28

Sr. No.	List of Practicals -	Periods
1.	Dismantling, reassembling of testing instruments	4
2.	Study, Precautions, testing and repair of line tester, parallel & series test lamp for single phase supply and three phase supply	8
3.	Precautions while using measuring instruments R, V, I, KWH, IR, HZ, COS $\phi$ , KVA, O	4
4.	Study, Dismantling, reassembling, up keeping, testing and repair of heat convector.	8
5.	Study, reassembling, up keeping function owning precaution, testing and repairs of electric hand drill machine.	8
6.	Study, reassembling, up keeping function owning precaution, testing and repairs of electric power tools cutter, grinder, hammer	8
7.	Survey of power tools such as hammer/cutter grinder machines of different make as projects.	8
8.	Dismantling, reassembling, up keeping, testing and repairs blender, juicer, grinder.	8
9.	Dismantling, reassembling, up keeping, testing and repairs mixer/ food processor (3/6 speed).	12
10.	Dismantling, reassembling, up keeping, testing and repairs domestic vacuum cleaner car/pot/cylinder/wet/ up-right	12
11.	Study, dismantling, reassembling, installation, testing and repairs car fan/cabinet fan	12
12.	Study, dismantling, reassembling, installation, testing and repairs car fan/pedestal fan	8
13.	Study, dismantling, reassembling, installation, testing and repairs ceiling fan/exhaust fan	8
14.	Installation techniques, precautions, dismantling, up keeping, reassembling, testing and repairs of domestic floor mill	8
15.	Study of transistor biasing PNP, NPN and transistor as a switch	8
16.	Study of basic components testing and symbols	8

17.	Study of transistor as amplifier in common emitter configuration	8
18.	Dismantling, reassembling, testing and repair of hand dryer	8
19.	Study, testing, repairs, assembling of emergency CFL light	8
20.	Study, testing, assembling of refrigerator/deep freezer	8
21.	Study, testing, repairs, assembling of washing machine ordinary / semi / automatic	12
22.	Dismantling, reassembling, up keeping, testing and repairs of room cooler window, table pillar	12
23.	Study, selection, testing & repairs, installation of UPS, Stabilizers	8
24.	Study, selection, testing & repairs, installation of inverters	12
25	Study, functioning, up -keeping, testing & installation of air conditioner	8
26	Study, functioning, up -keeping, testing of hoist, crane & lift	8
27	Visit exhibition to market survey	8
28	Study of advanced appliance and detailed report	8
	<b>Total</b>	<b>240</b>

**XII Electrical Technology**  
**Sub : Electrical Appliances - (FA)**

**Time – 3 Hrs**

**Marks 80**

**Section A**  
**Practical**

Sr. No.	List of Practicals -
1.	<p><b>Dismantling, reassembling of testing instruments</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions - 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
2.	<p><b>Study, Dismantling, reassembling, up keeping, testing and repair of heat convector.</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
3.	<p><b>Study, reassembling, up keeping function owning precaution, testing and repairs of electric hand drill machine.</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions - 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
4.	<p><b>Study, reassembling, up keeping function owning precaution, testing and repairs of electric power tools cutter, grinder, hammer</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions - 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>

5.	<p><b>Dismantling, reassembling, up keeping, testing and repairs blender, juicer, grinder.</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions - 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: center;">-----</p>
6.	<p><b>Dismantling, reassembling, up keeping, testing and repairs mixer/ food processor (3/6 speed).</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions - 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: center;">-----</p>
7.	<p><b>Dismantling, reassembling, up keeping, testing and repairs domestic vacuum cleaner car/pot/cylinder/wet/ up-right</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions - 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: center;">-----</p>
8.	<p><b>Study, dismantling, reassembling, installation, testing and repairs car fan/cabinet fan</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions - 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: center;">-----</p>

9.	<p><b>Study, dismantling, reassembling, installation, testing and repairs Table fan/pedestal fan</b></p> <p>a) Constructional diagram - 15  b) Tools, equipments &amp; material with specification - 15  c) Working procedure &amp; precautions - 15  d) Connection, Testing &amp; conclusion - 15  e) Oral - <u>20</u>  80  -----</p>
10.	<p><b>Study, dismantling, reassembling, installation, testing and repairs ceiling fan/exhaust fan</b></p> <p>a) Constructional diagram - 15  b) Tools, equipments &amp; material with specification - 15  c) Working procedure &amp; precautions - 15  d) Connection, Testing &amp; conclusion - 15  e) Oral - <u>20</u>  80  -----</p>
11.	<p><b>Dismantling, reassembling, testing and repair of hand dryer</b></p> <p>a) Constructional diagram - 15  b) Tools, equipments &amp; material with specification - 15  c) Working procedure &amp; precautions - 15  d) Connection, Testing &amp; conclusion - 15  e) Oral - <u>20</u>  80  -----</p>
12.	<p><b>Study, testing, repairs, assembling of emergency CFL light</b></p> <p>a) Constructional diagram - 15  b) Tools, equipments &amp; material with specification - 15  c) Working procedure &amp; precautions - 15  d) Connection, Testing &amp; conclusion - 15  e) Oral - 20  -----  <u>80</u></p>
13.	<p><b>Study, testing, assembling of refrigerator/deep freezer</b></p> <p>a) Constructional diagram - 15  b) Tools, equipments &amp; material with specification - 15  c) Working procedure &amp; precautions - 15  d) Connection, Testing &amp; conclusion - 15  e) Oral - <u>20</u>  80</p>

14.	<b>Study, testing, repairs, assembling of washing machine ordinary / semi / automatic</b>																
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<b>SECTION-B</b>																	
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18.	<p><b>Study of transistor as amplifier in common emitter configuration</b></p> <p>a) Constructional diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Working procedure &amp; precautions - 15</p> <p>d) Connection, Testing &amp; conclusion - 15</p> <p>e) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: center;">-----</p>
19.	<p><b>Installation techniques, precautions, dismantling, up keeping, reassembling, testing and repairs of domestic floor mill</b></p> <p>a) Constructional/circuit diagram - 10</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Testing - 15</p> <p>d) Repairing procedure &amp; precaution - 15</p> <p>e) Installation - 10</p> <p>f) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: center;">-----</p>
20.	<p><b>Study, selection, testing &amp; repairs, installation of UPS, Stabilizers</b></p> <p>a) Constructional/circuit diagram - 10</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Testing - 15</p> <p>d) Repairing procedure &amp; precaution - 15</p> <p>e) Installation - 10</p> <p>f) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: center;">-----</p>
21.	<p><b>Study, selection, testing &amp; repairs, installation of inverters</b></p> <p>a) Constructional/circuit diagram - 10</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Testing - 15</p> <p>d) Repairing procedure &amp; precaution - 15</p> <p>e) Installation - 10</p> <p>f) Oral - <u>20</u></p> <p style="text-align: right;">80</p> <p style="text-align: center;">-----</p>

## Electrical Machines – (FB)

### Practical No. 1 to 21

Sr. No.	List of Practicals -	Periods
1.	Dismantling reassembling techniques of testing instruments	12
2.	To study of 3 phase transformer for its various connections i.e. star/star, star/delta, delta/star, scot	12
3.	Visit to transformer manufacturer	12
4.	Connect, start, run and reverse given 3 phase induction motor	12
5.	Measure starting and running current, voltage & speed of 3 phase induction motor	12
6.	Control the speed of 3 phase induction motor by various methods (by varying method by changing pole method)	12
7.	Dismantling the three phase motor	8
8.	Dismantling testing resembling and installation of three phase motor	12
9.	Noting data of burnt motor and remove the coils and clean the slot	12
10.	Insulate the slots, prepare new coils as per old could, in setting wedges in the slots, of rewind starter, tapping & binding & shaping of rewind starter coil	12
11.	Baking and varnishing of rewind starter	12
12.	Test the rewind motor, assemble the motor, test it and start and run	12
13.	Estimation, costing and billing of 3 phase induction motor rewind	12
14.	Find out start and end terminals by two voltmeter or two amp meter test the coil	8
15.	Study of control circuits accessories, preparation of simple circuits	12
16.	Dismantle the electric pump repairing and reassembling it	12
17.	Dismantle the submersible pump, repairing and reassemble it, study of float switch	12
18.	Study of relays, setting of relays	12
19.	Study of DOL starter and connect to three phase induction motor	12
20.	Study of fully automatic star delta starter and connect to 3 phase induction motor, replacement of faulty parts in starter	12
21.	Visit to rewinding shop and prepare detailed report	12.

	Total	240.
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**XII – Electrical Technology**  
**Sub: Electrical Machines - (FC)**

**Time – 3 Hrs**

**Marks 80**

**Section – A**

Sr. No.	List of Practicals -
1.	<p><b>To study of 3 phase transformer for its various connections i.e. star/star, star/delta, delta/star, scot</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
2.	<p><b>Connect, start, run and reverse given 3 phase induction motor</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
3.	<p><b>Measure starting and running current, voltage &amp; speed of 3 phase induction motor</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
4.	<p><b>Control the speed of 3 phase induction motor by various methods (by varying method by changing pole method)</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p>

5.	<p><b>Dismantling the three phase motor</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
6.	<p><b>Dismantling testing resembling and installation of three phase motor</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
7.	<p><b>Dismantle the electric pump repairing and reassembling it</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
8.	<p><b>Dismantle the submersible pump, repairing and reassemble it, study of float switch</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>

5.	<p><b>Dismantling the three phase motor</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
6.	<p><b>Dismantling testing resembling and installation of three phase motor</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
7.	<p><b>Dismantle the electric pump repairing and reassembling it</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>
8.	<p><b>Dismantle the submersible pump, repairing and reassemble it, study of float switch</b></p> <p>a) Wiring/circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 10</p> <p>c) Dismantling &amp; reassembling procedure - 20</p> <p>d) Testing/ precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">-----</p> <p style="text-align: right;">80</p> <p style="text-align: right;">-----</p>

## Section B

Sr. No.	List of Practicals -
9.	<p><b>Noting data of burnt motor and remove the coils and clean the slot</b></p> <p>a) Diagram - 20</p> <p>b) Tools, equipments &amp; material with specification - 20</p> <p>c) Procedure &amp; precaution - 20</p> <p>d) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
10.	<p><b>Insulate the slots, prepare new coils as per old coil, in setting wedges in the slots, of rewind starter, tapping &amp; binding &amp; shaping of rewind starter coil</b></p> <p>a) Diagram - 20</p> <p>b) Tools, equipments &amp; material with specification - 20</p> <p>c) Procedure &amp; precaution - 20</p> <p>d) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
11.	<p><b>Test the rewind motor, assemble the motor, test it and start and run</b></p> <p>a) Diagram - 20</p> <p>b) Tools, equipments &amp; material with specification - 20</p> <p>c) Procedure &amp; precaution - 20</p> <p>d) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>

## Section B

Sr. No.	List of Practicals -
12.	<p><b>Study of relays, setting of relays</b></p> <p>a) Circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Connection - 15</p> <p>d) Testing &amp; precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
13.	<p><b>Study of DOL starter and connect to three phase induction motor</b></p> <p>a) Circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Connection - 15</p> <p>d) Testing &amp; precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>
14.	<p><b>Study of fully automatic star delta starter and connect to 3 phase induction motor, replacement of faulty parts in starter</b></p> <p>a) Circuit diagram - 15</p> <p>b) Tools, equipments &amp; material with specification - 15</p> <p>c) Connection - 15</p> <p>d) Testing &amp; precaution - 15</p> <p>e) Oral - 20</p> <p style="text-align: right;">----- 80 -----</p>