

Total No. of printed pages = 7

EL-604/I&M/6th Sem/2018/J/A

INSTALLATION AND MAINTENANCE

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

PART – A

Marks – 25

Answer *all* the questions.

1. Multiple choice questions : (Choose the correct answer). 1×10=10
 - (i) The insulation in a current carrying conductor is provided to prevent
 - (a) Current leakage
 - (b) Electric shock
 - (c) Both (a) and (b) above
 - (d) None of the above

[Turn over

(ii) The resistance of earth is

- (a) Infinite
- (b) High
- (c) Low
- (d) The minimum possible

(iii) The earth potential is taken as

- (a) Zero
- (b) That of supply
- (c) Infinite
- (d) None of the above

(iv) The main objectives of the foundations are

- (a) to support the weight of the machine
- (b) to maintain the alignment of the machine
- (c) to provide firm for the machine
- (d) All of the above

- (v) Size of the foundation for the electrical machine depends upon
- (a) size of the machine
 - (b) condition of the soil
 - (c) type of foundation
 - (d) All of the above
- (vi) Shims are used
- (a) to align the final position of motor
 - (b) to adjust the gap between the motor and foundation
 - (c) under the tooth of motor to raise the shaft
 - (d) None of the above
- (vii) A fuse element should have
- (a) low melting point
 - (b) high melting point
 - (c) very high melting point
 - (d) All of the above

(viii) The main purpose of earthing is

- (a) to save human life
- (b) to allow the current to flow to earth in case of faults
- (c) to maintain the line voltage constant.
- (d) All of the above.

(ix) For three phase 5 H.P. motors

- (a) no earthing is required
- (b) one earthing is required
- (c) two earthings are required
- (d) None of the above

(x) Earth resistance is kept low

- (a) by using large size of earth electrodes
- (b) by increasing the number of earth electrodes
- (c) by increasing the depth of pit
- (d) All of the above

2. Fill in the blanks with appropriate word or words:
1×10=10

- (i) Maintenance is the _____ for maintaining the machinery in working conditions.
- (ii) The machinery must be kept _____ from moisture, humidity, and dirt.
- (iii) Hex saw is _____ used for cutting.
- (iv) The electric power can be transmitted by _____.
- (v) Three phase energy conductor has _____ terminals.
- (vi) In case of electrical plants, the buckets are filled with _____ instead of water.
- (vii) Carbon tetrachloride extinguisher is used to extinguish the fire of _____.
- (viii) Proper precautions can _____ the accidents.
- (ix) The basic function of a circuit breaker is to _____.
- (x) The chemical used in breather is _____.

3. Write true or false :

1×5=5

- (i) Underground cables are more flexible than overhead systems.
- (ii) Transmission of electrical energy at high voltages is more economical.
- (iii) Pin type insulators are used upto 33 kV.
- (iv) Drying out of the motor is not necessary before using.
- (v) Megger is used for detection of earth leakage current.

PART – B

Marks – 45

Answer any *three* questions. 15×3=45

- 4. (a) Define maintenance. 2
- (b) Give the classification of maintenance. 4
- (c) Explain the methods of preventive maintenance and breakdown maintenance. 3+3=6
- (d) State the causes of breakdown. 3
- 5. (a) Discuss the electrical test to be performed before commissioning an electrical machine. 7

- (b) Tabulate the recommended maintenance schedules in case of induction motor. 8
6. (a) What is earthing ? Discuss the different factors that influence the earthing resistance. 7
- (b) With a neat diagram describe how earth resistance is measured. 8
7. (a) What do you understand by the term electric shock ? What are its effects ? 3+4=7
- (b) Describe the tests to be performed in a domestic electrical installation. 8
8. Write short notes on any *three* : 5×3=15
- (a) Fire extinguisher
- (b) Streamline purifier
- (c) Megger
- (d) Maintenance schedule of transmission line.