SLR-FM-454

Seat No.		Set	P

B.E. (Part – II) (CGPA) Examination Nov/Dec-2019
Electrical Engineering
ELECTRICAL INSTALLATION, TESTING AND MAINTENANCE

Day & Date: Saturday, 23-11-2019 Max. Marks: 70
Time: 02:30 PM To 05:30 PM

Instructions: 1) Q. No. 1 is compulsory and should be solved in first 30 minutes in answer Book.
2) Assume suitable data if necessary and mention it clearly.
3) Figures to the right indicate full marks.

MCQ/Objective Type Questions

Duration: 30 Minutes Marks: 14

Q.1 Choose the correct alternatives from the options and rewrite the sentence. **14**

1) Do's and Don'ts are observed carefully in safety precautions as per _____.
   a) IS 5216-1962 b) IS 5216-1964
   c) IS 5216-1966 d) IS 5216-1969

2) The torque of induction motor is _____.
   a) Directly proportional to V b) Directly proportional to V^2
   c) Inversly proportional to V d) Inversly proportional to V^2

3) While conducting momentary overload test on induction motor, the duration of excess load 50 H.P. motor is _____.
   a) 2 sec b) 5 sec
   c) 8 sec d) 9.5 sec

4) In moisture proofness test, humidity is maintained to _____.
   a) 70% b) 80%
   c) 90% d) 110%

5) In dielectric absorption test by using megger, insulation resistance is measured at regular interval of _____ and recorded.
   a) 24 hour b) 12 hour
   c) 30 min d) 5 min

6) For class A insulating material, maximum operating temperature is _____.
   a) 60^oC b) 90^oC
   c) 95^oC d) 105^oC

7) Polarization index is greater than _____ for class A insulation.
   a) 1 b) 1.5
   c) 2 d) 2.5

8) The impulse test level is determined by operating level is ____ times normal operating value.
   a) 1 to 2 b) 2 to 2.5
   c) 4 to 5 d) 7 to 9

9) As per I.E.C. for 66 kv system voltage, the impulse withstand voltage is _____.
   a) 100kv b) 150kv
   c) 220kv d) 325kv

10) Which of the following factors affects on life of insulating material?
   a) Temperature b) Deposition of dust
   c) Impurities d) All of these

11) In lead acid battery positive plate (anode) made up of _____.
   a) PbO_2 b) Pb
   c) SO_2 d) PbO_3

12) The type of ELCB are _____.
   a) Voltage operated b) Current operated
   c) Both a and b d) Frequency operated

13) While installing electrical machines, checking of foundation for correct level is to be carried out then, we use _____.
   a) Spirit level b) Dial indicator
   c) Bearing puller d) Filler gauge

14) For rotating machinery, the concrete foundation should be about _____ larger in length and breadth.
   a) 5 cms b) 15 cms
   c) 25 cms d) None of these

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B.E. (Part – II) (CGPA) Examination Nov/Dec-2019
Electrical Engineering
ELECTRICAL INSTALLATION, TESTING AND MAINTENANCE

Day & Date: Saturday, 23-11-2019 Max. Marks: 56
Time: 02:30 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Section – I

Q.2 Attempt any four. **16**

a) Classify methods of providing artificial respiration. Explain any one in detail.

b) Define the following terms in connection with safety:
1) Responsibility
2) Authority
3) Accountability
4) Monitoring

c) What are the factors affecting on preventive maintenance schedule? Explain in short.

d) A brake test was carried out on shunt motor & following the observations for one reading.

Voltage	Current	Speed (rpm)	Spring Balance	
			W_1 (kg)	W_2 (kg)
250V	2A	1500	3	0.2

The radius of break pulley = 7.5 cm. Calculate
1) Input
2) Torque
3) Output
4) Efficiency

e) Explain with neat sketch & resistance equation measurement of DC resistance of three phase induction motor.

f) Explain with neat sketch open delta method in case of transformer.

Q.3 Attempt any two. **12**

a) A D.C. machine is tested for Swinburne's test. The machine is rated for 230V, 50A. The observations during test were as follows.
No load current = 5A
Armature resistance = 1Ω
Shunt field resistance = 200 Ω
Find full load efficiency, if the machine was tasted as D.C. motor.

b) Classify methods of measurement of slip in case of three phase induction motor. Explain any two methods in detail.

c) Explain with neat sketch any two methods of temperature rise test in case of transformer.

Section – II

Q.4 Attempt any four. **16**

a) State the factors affecting life of insulating material. Explain in brief.

b) State and explain properties of good transformer oil.

c) Explain with neat sketch Filler gauge.

d) Write a short note on internal and external causes of failure of equipment.

e) Discuss in short factors involved in designing machine foundation.

f) What are the effects of misalignment in case of directly coupled drives and indirectly coupled drives?

Q.5 Attempt any two. **12**

a) Explain any two methods of measuring temperature of internal parts of windings / machines and apply the correction factor when the machine is hot.

b) 1) Write a short note on general maintenance of lead acid batteries.

2) Explain with neat sketch Dial test indicator.

c) Discuss in detail electrical fault and mechanical fault on the basis of reasons for development of faults and remedial measures.