

## Test 3: Subject Knowledge Test for Junior Engineer (Electrical)

Date of Examination: 20.7.2019

Time: 90 Minutes

Name of the Candidate:									
Application No:									

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*Candidate Signature*

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*Invigilator's Signature*

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### Instructions to Candidates:

1. Use of Calculators, cell phones and other electronic devices IS NOT permitted inside Examination Hall.
2. Candidate should carefully read the instructions on Question paper and mark correct entries in the Square bracket provided against each question
3. For each question, choose the correct response answer from out of four available options.
4. Each Correct answer carries one Mark and each wrong answer carries negative of 0.25 Mark. Marking more than one choice as answer will be treated as wrong answer.
5. Clarifications on questions are not permitted.
6. Rough work can be done in any blank space provided in the Question booklet only. Rough work should not be done anywhere except at the space provided at end of the question paper.
7. No candidate is allowed to leave the examination hall till the examination is over.

### Part A (30 Marks)

1.	A Manganin swamp resistance is connected in series with a moving coil ammeter consisting of a milli-ammeter and a suitable shunt in order to A. minimizing the effect of temperature variations B. obtain large deflecting torque C. reduce the size of the meter D. minimize the effect of stray magnetic fields	[   ]
2.	The circulating current in a parallel LC circuit at any resonant frequency is A. directly proportional to frequency B. inversely proportional to frequency C. independent of frequency D. square of the frequency	[   ]
3.	A dynamometer type watt-meter responds to the A. average value of Reactive Power B. r.m.s. value of Active Power C. peak value of Active Power D. Average value of Active Power	[   ]
4.	If 125 V is applied across a 250 V, 100 W bulb, the power consumption would be A. 100 W                      B. 50 W                      C. 25 W                      D. 12.5 W	[   ]
5.	When two watt-meter method of measurement of power is used to measure power in a balanced three phase circuit, if the wattmeter reading is zero, then A. power consumed in the circuit is zero B. power factor of the circuit is zero C. power factor is unity D. power factor is 0.5	[   ]
6.	In a two element series circuit, the applied voltage and the resulting current are $v(t) = 50 + 50 \sin(5000t)$ V and $i(t) = 11.2 \sin(5000t + 63.4)$ A respectively. The nature of the element would be A. RL                      B. RC                      C. LC                      D. RLC	[   ]
7.	Most commonly used AC motor is A. synchronous motor B. slip ring induction motor C. squirrel cage induction motor D. AC commutator motor	[   ]
8.	A synchronous motor is running clockwise. If the direction of its field current is reversed, the motor would A. come to stop B. run in reverse direction C. run in the same direction D. run in the same direction but at a slightly reduced speed	[   ]

9.	Two induction motors have no-load operating power factors of 0.1 and 0.3. The induction motor with 0.1 power factor is A. bigger than one other motor B. smaller than the other motor C. of the same size as the other motor D. not possible to compare	[ ]
10.	The Buchholz relay prevents a transformer A. all types of internal faults B. line-to-line fault C. winding to winding fault D. single line to ground fault	[ ]
11.	The function of anti-aliasing filter is A. to remove high frequency components B. to remove both low and high frequency components C. to allow low frequency components D. to remove low frequency components	[ ]
12.	Which relay is more susceptible to electromagnetic interface A. digital relay B. electro-mechanical relay C. static relay D. all (A) (B) and (C)	[ ]
13.	Which type of backup protection scheme is widely used in the field A. relay backup B. breaker backup C. remote backup D. Surge diverter backup	[ ]
14.	Distance relay is the best example of A. unit protection scheme B. non-unit protection scheme C. independent protection scheme D. Earth fault relay	[ ]
15.	The function of trip isolation circuit is a) to avoid maloperation of relay during periodic testing of relay b) to trip the circuit breaker c) to trip the main relay d) to trip the back up relay	[ ]
16.	The function of auxiliary relay is A. to carry high fault current B. to sense the inception of fault C. to provide backup D. to carry high voltage	[ ]

17.	Earth fault relays are A) Directional Relays B) Non-Directional Relays C) Short operate time relays D) Circuit Breaker	[ ]
18.	Mho-Relay is normally used for the protection of A) Short Transmission line B) Medium Transmission Line C) Long Transmission Line D) No Length criterion	[ ]
19.	The relay used for feeder protection is A) Under-Voltage Relay B) Translay Relay C) Thermal Relay D) Buchholz Relay	[ ]
20.	Thermal Relays are commonly used in A. Motor Starters B. Generator protection C. Transformer Protection D. Feeder Protection	[ ]