BIRLA INDUSTRIAL & TECHNOLOGICAL MUSEUM
(A unit of National Council of Science Museums)
19A, Gurusaday Road, Kolkata – 700 019

Written Test for recruitment of Technician 'A' (Electrical) at NBSC, Siliguri

Date: 04.09.2023 **Marks: 30**

Time: 1 hour

Roll No: _____ Signature: _____

General Instructions:

1. All questions are compulsory.
2. To answer objective type questions put a (√) mark on the correct answer in the question paper itself from the 4 alternatives given below against each question.
3. To change answer, put (X) on previous answer and (√) the fresh answer.
4. Smart phone/smart watch are to be put on switched off mode in the examination hall.

(1 X 30) = 30

1. A transformer works on the principle of .....
   a. Self induction b. Mutual Induction c. Induction Heating d. None of a to c

2. The unit of electrical energy is .....
   a. Kilowatts b. Kilowatt per hour c. Kilowatt.hour d. None of a to c

3. Total power consumed by a 3 Phase balanced electrical load is given by the formula .....
   a. $\sqrt{3}V_L I_L \cos\phi$ b. $3V_p I_p \cos\phi$ c. both a & b d. None of a to c

4. Resistance offered by copper conductor is ..... aluminium conductor of same size
   a. more than b. less than c. the same d. None of a to c

5. If two resistances of 10 Ohms each are connected in parallel, the effective resistance will be .....
   a. 20 Ohms b. 5 Mhos c. 10 Ohms d. 5 Ohms

6. The statement **'Distilled water is a good conductor of electricity'** is .....

a. True b. False c. Partially correct d. None of a to c

7. If current in each phase of a balanced 3 Phase circuit is 30A, the current through neutral will be

a. 30A b. 90A c. Zero d. None of a to c

8. Insulation resistance is measured with the help of a .....

a. Meggar b. Multimeter c. Tongue-tester d. Earthtester

9. As per BIS recommendation, minimum size of copper wiring used for lighting wiring is .....

a. 1/18 b. 1.0 sq.mm. c. 1.5 sq.mm. d. 2.5 sq. mm.

10. For load calculations, 6A and 16A socket outlets are respectively considered to be rated at .....

a. 100W & 500W b. 50W & 500W c. 500W & 1500W d. 100W & 1000W

11. Each power circuit in residential building can feed a maximum ..... Nos. of 16A socket outlets

a. 10 b. 3 c. 2 d. 1

12. For a three phase equipment, minimum number of earth continuity conductor(s) is .....

a. 1 b. 2 c. 3 d. 4

13. While testing an electrical installation before connecting to supply, the minimum value of insulation resistance between phase to phase and between phase to earth should be .....

a. 20 & 10 MegaOhms

b. 10 & 5 MegaOhms

c. 5 & 2 MegaOhms

d. 2 & 1 MegaOhms

14. The classes of winding insulation are .....

a. Y, A, E, B, F, H & C

b. A, B, C, D & E

c. B, C & E

d. None of a to c

15. An inductive circuit has a ..... nature of power factor

a. Leading b. Lagging c. In line d. None of a to c

16. Light output of a lamp is expressed in .....

a. Lumens b. Lux c. Candels d. Watts

17. A high pressure sodium vapour lamp is an example of a .....

a. QL induction light

b. incandescent lamp

c. gas discharge lamp

d. None of a to c

18. A DOL starter is recommended for starting motors of upto ..... HP rating only

a. 1 b. 2 c. 3 d. 5

19. 1 HP = ... Watts

a. 750 b. 746 c. 740 d. 725

20. Rating of distribution transformers is in .....

a. KVAr b. kVAh c. kVA d. kW

21. Transformer cores are made up of stampings for reducing it's .....

a. eddy current losses b. weight c. size d. cost

22. Armouring in cable is useful for mechanical protection and for ....

a. moisture protection

b. phase continuity

c. making it stiff

d. earth continuity

23. A.C. ceiling fan motor with capacitor is an example of a ..... type of a motor

a. shaded pole b. permanent capacitor c. shaded pole d. universal

24. The odd-man out of the following is .....

a. a fuse b. a MCB c. an ELCB d. a switch

25. The speed of a 50 Hzs A.C. induction motor having 4 poles will be .....

a. 3000 rpm b. 1500 rpm c. 750 rpm d. None of a to c

26. Electricity consumed by 2Nos. of 500W lamps in 2 days, by operating it 5 hours/day will be ...

a. 10,000 units b. 1,000 units c. 100 units d. 10 units

27. The domestic electric supply is single phase, ... Volts, 50Hzs, AC

a. 220 b. 230 c. 240 d. 250

28. As per BIS standards, the LT wires & cable are rated for ..... Volts

a. 650-1100 b. 440-660 c. 250-415 d. 230-400

29. The expanded form of ELCB is

a. Extra Large Circuit Breaker
b. Earth Leakage Current Balancer
c. Earth Leakage Circuit Breaker
d. Electronic Low Capacity Breaker

30. Ohm's law states that

a. a current carrying conductor is associated with flux
b. current flowing through a conductor is directly proportional to the applied voltage
c. resistance of a conductor is always constant
d. for every action there is an equal & opposite reaction