

Birla Industrial and Technological Museum
(a unit of National Council of Science Museums)
Aptitude test for the recruitment of Technician A (Electrical)

Time: 60 minutes

Full Marks: 30

Name of the Candidate:

Roll Number:

Date:

Signature of the Candidate	Signature of the Invigilator
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Tick the following questions (01 mark for each question)

- 1) Open circuit test of a Transformer gives
- a) Hysteresis loss
 - b) Eddy current loss
 - c) Sum of hysteresis loss and eddy current loss
 - d) Copper loss
- 2) A fuse is normally
- a) Current limiting device
 - b) Voltage limiting device
 - c) Power limiting device
 - d) Power factor correcting device

3) Best good conductor

- a) Gold
- b) Aluminum
- c) Platinum
- d) Nickle

4) Electric pressure is also called

- a) Resistance
- b) Power
- c) Voltage
- d) Energy

5) The method of cooling in pole-mounted transformers is

- a) OFAN
- b) ONAN
- c) ONAF
- d) ON

6) Bulbs in street lighting are all connected in

- a) Parallel
 - b) Series Parallel
 - c) Series
 - d) End-to-End.
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Fill in the blank (01 mark for each question)

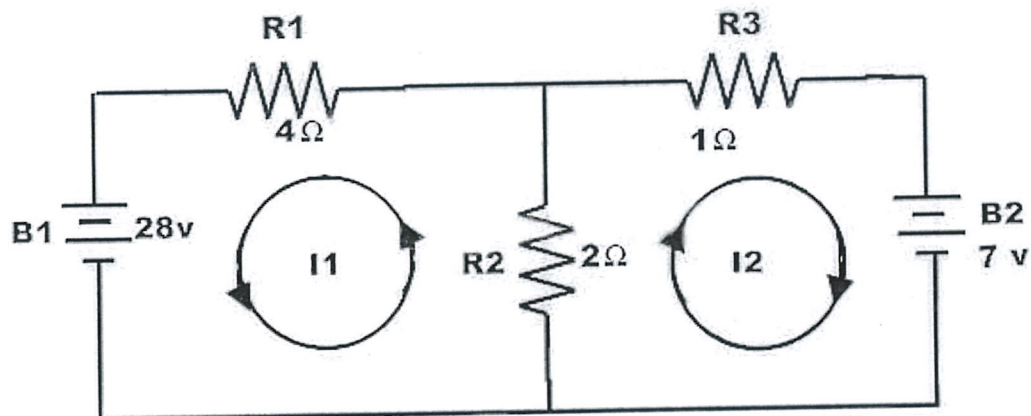
- 1) The amount of electricity generated by a solar panel depends on the number of _____ in that location.
 - 2) A transistor is a semiconductor device used to _____ or switch electrical signals and power.
 - 3) A power transformer works on the principle of _____.
 - 4) Power transformers is a device that transfer electrical energy between circuits without changing the _____.
 - 5) A battery consists of one or more electrochemical cells with cathode, anode, and _____ components.
 - 6) In most Alternating Current (AC) circuits, there is never power factor equal to one because there is always some _____ in the power lines.
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Write the abbreviation of the following. (01 mark for each question)

- 1) XLPE : _____
 - 2) BEE : _____
 - 3) ATS : _____
 - 4) PILC : _____
 - 5) RCBO: _____
 - 6) SPDT : _____
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Short Notes: (03 marks each question)

- 1) Principal of BLDC fan.
- 2) What is an equivalent circuit of a transformer show with diagram?
- 3) Write the Kirchhoff's Current Law (KCL) and find the currents I_1 and I_2 by applying the Kirchhoff's laws.



- 4) i) What is the definition of power factor in AC circuit?
ii) What is the Formula of power factor in AC circuit?
iii) How can we improve the power factor in a system?

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