

1001- Electrical Service Technician “A” Answer Schedule

Note: (1 mark) means that the preceding statement earns 1 mark.

This schedule sets out the expected answers to the examination questions. The marker can exercise their discretion and decide on the overall adequacy of any answer that is presented in the candidate’s own words.

Section One

Question 1

250 volts.

Multichoice answer – (a)
(5 marks)

Question 2

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Multichoice answer – (d)
(5 marks)

Question 3

Withdraw the appliance plug flexible cord from the socket.

Multichoice answer – (c)
(5 marks)

Question 4

4A

Multichoice answer – (b)
(5 marks)

Question 5

10 amps.

Multichoice answers – (b)
(5 marks)

Question 6

2300 watts

Multichoice answer – (c)
(5 marks)

Question 7

435 mA.

Multichoice answer – (b)
(5 marks)

Question 8

Lowest current.

Multichoice answer – (c)
(5 marks)

Question 9

10 amps.

Multichoice answers – (b)
(5 marks)

Question 10

2 Kw

Multichoice answer – (b)
(5 marks)

Section Two

Question 11

(a) Any voltage exceeding 50 volts a.c. or 120 volts ripple-free d.c. but not exceeding 1000 volts a.c. or 1500 volts d.c.

ER 2
(2 marks)

(b) Means contact, by any person or animal, with live parts, including contact by any thing being carried or worn by that person or animal.

ER 2
(3 marks)

Question 12

(a) The number of complete changes/cycles per second.

(1 mark)

(b) Diagram

(4 marks)

Question 13

Visual	NA mechanical and sight	Free from hazard or ok
Protective Earth Conductor	(Low reading) ohmmeter	Max 1 ohm
Insulation resistance	500V insulation resistance tester	Min 1 M ohm

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(½ mark each – total of 5 for all correct)

Question 14

Any TWO of:

- The appliance is fixed wired and connected through a continuous flexible cord to a supply of electricity from a source isolated from earth with a voltage between conductors not exceeding 250 volts:
- The appliance is supplied with electricity from a safety extra-low voltage source:
- The appliance is double-insulated and is supplied with electricity through a residual current device.

ER 77(3)(a)(b)(c)

(5 marks)

Question 15

(a) (i) $I = V/R = 230/92 = 2.5$ amps (1 mark)

(ii) $W = I^2R = 2.5 \times 2.5 \times 92 = 575$ watts (1 mark)

(b) (i) $R_t = \text{Product/Sum} = 46 \times 46 / 46 + 46 = 23$ ohms (1 mark)

(ii) $I = V/R = 230/23 = 10$ amps (1 mark)

(iii) $W = I^2R = 10 \times 10 \times 23 = 2300$ watts (1 mark)

(½ mark in each case if working not shown.)

Question 16

- (a) • Immerse affected area in cold water or under cool running water to relieve pain (1 mark)
- For up to 10 -15 minutes (1 mark)
- (b) (i) Lightly cover with a sterile dressing (1 mark)
- (ii) • **Do not** puncture blisters and –
• **Do not** apply oils, lotions, ointments (2 marks)

Question 17

Any **FIVE** of:

- Check for obvious damage or defects in the accessories, connectors, plugs or extension outlet sockets.
- Check that flexible cords are effectively anchored to equipment, plugs and cord extension sockets.
- Check for damage to flexible cords -
 - (i) the inner cores of flexible supply cords are not exposed or twisted;
 - (ii) the external sheaths are not cut, abraded, twisted, or damaged to such an extent that the insulation of the inner cores is visible; and (In) unprotected conductors or insulation tape are not in evidence.
- For portable outlet devices, check that the warning indicating the maximum load to be connected to the device is intact and legible.
- Check that any controls are in good working order i.e. they are secure, aligned and appropriately identified.
- Check that covers, guards and the like are secured in the manner intended by the manufacturer or supplier.
- Check that safety facilities and devices are in good working order.
- Check that ventilation inlets and exhausts are unobstructed.

AS/NZS 3760: 2.3.2
(5 marks)

Question 18

- Connect phase and neutral together, and test between this linked pair and earth, or (2½ marks)
- Bridge out the semi-conductors before testing. (2½ marks)

Question 19

(a)
Flex
Heater
Ohmmeter
(or equivalent sketch)

(2½ marks)

(b) Heater switch must be on.

(½ mark)

(c) $V/R = 240/24 = 10A$

(½ mark for the answer only – total 1 mark)

(d) $W = 240V \times 10A = 2400W$
(or = $10A \times 10A \times 24 = 2400W$)

(½ mark for the answer only – total 1 mark)

Question 20

Any TWO of:

- To ensure that the control switch, if single pole, is connected in the phase conductor.
- P – P terminal, N – N terminal, PEC – frame.
- To ensure that the metal framework is connected to the earth conductor.

(5 marks)