Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2016/2017

COURSE NAME	:	ELECTRONIC TESTING AND MAINTENANCE
COURSE CODE	:	BWC 31203
PROGRAMME CODE	:	BWC
EXAMINATION DATE	:	JUNE 2017
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

Q1 (a) List **FOUR (4)** of the information that are usually included in product specification manual.

(4 marks)

(b) Explain the function of a Department of Standard Malaysia as a National Standards Body especially for product accreditation.

(6 marks)

(c) Classify **FOUR (4)** main reasons that can contribute to the equipment failure.

(4 marks)

(d) As a trained technician, discuss the nature of faults that may occur from an electronics equipment.

(6 marks)

Q2 (a) What is the basic step needs to be taken before dis-assembling an electronics equipment?

(2 marks)

(b) After establishing the fault and localizing the defective component, special techniques are required to carry out the repairs. Discuss the steps required to carry out the repair work.

(8 marks)

(c) **Figure Q2(c)** shows an electronic test equipment.

(i) What is the name of the equipment?

(2 marks)

(ii) Classify **FOUR (4)** basic measurement functions that can be perform by the equipment.

(4 marks)

(iii) By sketching a simple diagram, explain the procedure to measuring the voltage across a resistor.

(4 marks)

Q3 (a) As an electronics technician, you are planning to troubleshoot a television. Suggest **THREE (3)** types of hand tools that can be used in the troubleshooting process.

(3 marks)

(b) Choose a chemical (soft tools) to clean an electronics board. Give the reason of choosing the chemical.

(3 marks)

(c) Organize the steps to solder an electronic components on a printed circuit board (PCB).

(4 marks)

(d) (i) By sketching a simple diagram, organize steps to test the functionality of a 13 A 240 VAC ceramic fuse by using a digital multimeter.

(5 marks)

(ii) By sketching a simple diagram, determine whether a 470 μF 50 V dielectric capacitor is in good condition or not by using a digital multimeter.

(5 marks)

Q4 (a) You are given a 1N4007 silicon (Si) semiconductor diode.

(i) Discuss briefly the possible failures that may result on the diode semiconductor.

(2 marks)

(ii) Construct a simple diagram to test the diode using digital multimeter (DMM). Explain the testing procedure.

(6 marks)

(iii) Predict the results of the diode testing under forward biased and reverse biased using DMM.

(2 marks)

(b) List **FOUR (4)** unique properties of an operational amplifier (OP-AMP).

(4 marks)

(b) Categorised the linear power supply circuits based on its functional block diagram. Discuss the function of each categorised section.

(6 marks)

Q5 (a) (i) Discuss systematically the importance of carrying out the preventive maintenance process.

(3 marks)

(ii) Why is the preventive maintenance of equipment should be carried out?

(3 marks)

(iii) List the steps of preventive maintenance routine that should be carried out.

(4 marks)

(b) (i) Explain the purpose of conducting equipment maintenance management.

(5 marks)

(ii) Discuss the purpose of recording and documenting the service and maintenance process.

(5 marks)

- END OF QUESTIONS -

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Figure Q2(c)