

**CONFIDENTIAL**



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2015/2016**

**COURSE NAME** : ELECTRONIC TESTING AND  
MAINTENANCE  
**COURSE CODE** : BWC 31203  
**PROGRAMME CODE** : BWC  
**EXAMINATION DATE** : JUNE/JULY 2016  
**DURATION** : 3 HOURS  
**INSTRUCTION** : ANSWER ALL QUESTIONS

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

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- Q1** (a) All electronic equipments must have a performance specifications, which usually follows a standard format. List **four (4)** of them. (4 marks)
- (b) Explain the following terms;
- (i) breakdown maintenance,
  - (ii) calibration. (8 marks)
- (c) As a television technician, you are asked to run a troubleshooting process on a malfunction television. Based on your knowledge on **fault establishment**, arrange simple examination process on the malfunction television. (8 marks)
- Q2** (a) **Figure Q2(a)** shows a simple block diagram of architecture of digital storage oscilloscope (DSO). Based on the block diagram, interpret the functions of each sections. (10 marks)
- (b) Identify the function of a 10× voltage probe for DSO. (4 marks)
- (c) Classify **three (3)** types of
- (i) hand tools and,
  - (ii) soft tools,
- that are commonly used in troubleshooting process of electronic equipments. (6 marks)
- Q3** (a) (i) By referring to **Figure Q3(a)(i)**, what is the resistance and tolerance of the resistor? (3 marks)
- (ii) By sketching a simple diagram, clearly explain the procedure to measure the resistance of a fixed resistor using digital multimeter (DMM). (7 marks)

- (b) You are given a 1N4001 silicon (Si) semiconductor diode.
- (i) Briefly discuss the possible failures that may results on the diode semiconductor.
  - (ii) Construct a simple diagram to test the diode using digital multimeter (DMM).
  - (iii) Predict the results of the diode testing under forward biased and reverse biased using DMM.
- (10 marks)
- Q4** (a) **Figure Q4(a)** shows a typical inverting OP-AMP circuit.
- (i) Calculate the voltage gain.
  - (ii) Calculate the output voltage.
  - (iii) If the output voltage is measured as 0.0 V, arrange simple troubleshooting procedure in order to identify the faults.
- (10 marks)
- (b) Categorised the linear power supply circuits based on its function (block diagram). Discuss the function of each categorised section.
- (10 marks)
- Q5** (a) (i) What is preventive maintenance?
- (3 marks)
- (ii) Explain the importance to carrying out the preventive maintenance process.
- (3 marks)
- (b) Classify the general objectives of a maintenance management.
- (4 marks)

- (c) A well-organized equipment management services department has a great responsibility towards assuring the production in a factory matches the proposed applications, which leads to well-planned maintenance programme.

Arrange the essentials of a good equipment management programme. Briefly discuss each of your answers.

(10 marks)

**- END OF QUESTIONS -**

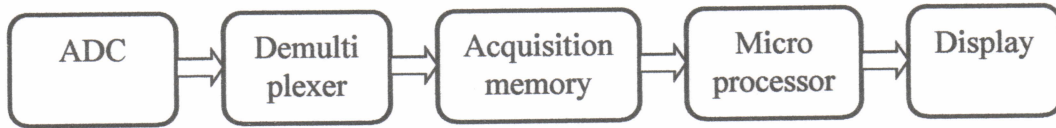
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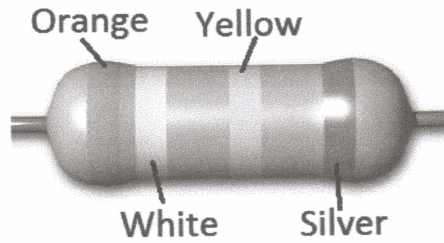
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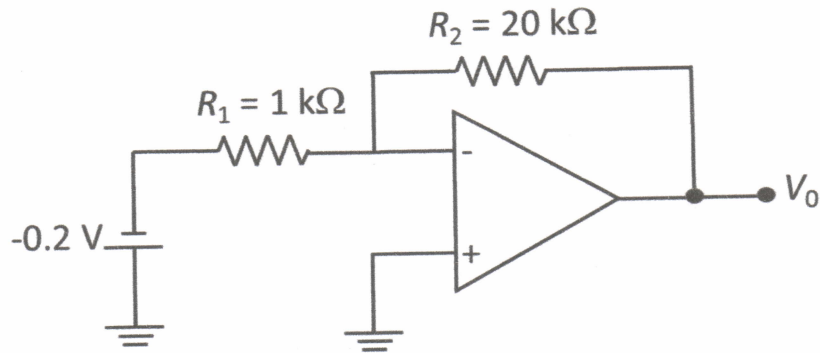
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**Figure Q2(a)**



**Figure Q3(a)(i)**



**Figure Q4(a)**