

**W1-2-60-1-6**

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2016/2017**

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF DIPLOMA IN INFORMATION TECHNOLOGY

**DIT 0206 : ANALOGUE ELECTRONICS**

**DATE: APRIL 2017 TIME: 1.30 HOURS**

**INSTRUCTIONS:**

**ANSWER QUESTION ONE [COMPULSORY] AND ANY OTHER ONE QUESTIONS**

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**QUESTION ONE [40 MARKS]**

1. Discuss the components that makes up a diode [2 marks]
2. Explain the difference between forward biasing and reverse biasing [4 marks]
3. Explain how PN junction diode works [2 marks]
4. In the circuit below find:-
5. Effective resistance in the circuit [4 marks]
6. Total current in the circuit [2 marks]
7. A 10μf capacitor is charged from 30v supply and the current across uncharged 50μf capacitors.

Calculate :

1. The find p.d across the combination [2 marks]
2. The initial and find energies attained [2 marks]
3. A capacitor is computed from the conductive method plates 120cmx 100 cm which is spaded 40mm apart from each other and used dry air as the di electric method. Calculate the capacitance of the capacitor , where the dielectric constant is 8.84x10-R [4 marks]
4. With aid of diagrams explain the following terms [2 marks each]

(i) Insulator

(ii) semi conductor

(iii) Conductor

1. Explain how operational an………works [6 marks]
2. With aid of diagram explain how capacitor works [4 marks]
3. Distinguish between analog electronic circuit and digital electronic circuit [4 marks]

**QUESTION TWO [20 MARKS]**

1. Discuss any four characteristics of P-N ……………….diode [4 marks]
2. With a well drawn circuits diagram discuss the full wave rectification with ideal characteristics [10 marks]
3. With aid of diagram, explain what is meant by wavelength , amplitude and frequency of signal [6 marks]

**QUESTION THREE [20 MARKS]**

1. With aid of diagrams explain the three bipolar transistor configuration [9 marks]
2. Discuss any six three of capacitor [6 marks]
3. Device the capacitance earthing and explain the factors that affect parallel plate capacitor [5 marks]