



Faculty of Computers & Artificial Intelligence

2nd Term (2019-2020) Final Exam

class: 1st year 2019-2020

Course Code: BS131

Course name: Electronics



Benha University

Final Date: 7 / 6 /2020

Total Marks: Pass / Fail

Examiner(s): Dr. Tamer Ahmed Abassy

Research submission: From 31 May to 7 June 2020

a) Write a research project in ONE of the following topics:

Topic No. 1

In the beginning of the research, write about the basic laws of electricity and simply about the methods used in circuit analysis.

Talk about the Ideal Basic Circuit Element (There are five ideal basic circuit elements: Voltage Sources (describing the meaning of voltage (potential difference)), Current Sources (describing the meaning of electric charge and current), resistors, inductors, and capacitors). For each element, talk about the operation, the construction, the uses, the types and the laws associated with each element.

At the end, indicate the role of semiconductors in the electronic revolution.

Topic No. 2

In the beginning of the research, write about the basic laws of electricity and simply about the methods used in circuit analysis.

The materials are classified according to conductivity as good conductors, insulators and semiconductors, why?

Talk about the Diode: Operation, Manufacturing describing the P-Type and N-Type semiconductors, Circuit analysis (ideal- practical- complete) and Uses (especially power supply in details).

At the end, indicate the role of semiconductors in the electronic revolution.

Topic No. 3

In the beginning of the research, write about the basic laws of electricity and simply about the methods used in circuit analysis.

The materials are classified according to conductivity as good conductors, insulators and semiconductors, why?

Talk about Transistor: Operation, Manufacturing, describing the PNP-Type and NPN-Type operation, Circuit analysis and Uses.

At the end, indicate the role of semiconductors in the electronic revolution.

b) **Notes:**

- Write your research according to the faculty research template.
- The students who will send the same copy of research, all of them will be fail.
- Your research is not the only way to pass the subject because you may take an Oral Test (through a recorded online video meeting using Microsoft Team or others) in what you write in the research and understanding the basics of the subject.
- Study hard, write a good research and understand what you will write to make your destiny in your hand after ALLAH, not in others hand.

GOOD LUCK,

Examiner(s)

Dr. Tamer Ahmed Abassy

**Head of Departement /
Program Coordinator**