Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIRST/SECOND SEMESTER B.TECH DEGREE EXAMINATION, JULY 2018

Course Code: EC100

Course Name: BASICS OF ELECTRONICS ENGINEERING

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks Marks

1 Write four important milestone developments in the evolution of electronics and also give typical applications of electronics in different fields. (5)

2 Differentiate between intrinsic and extrinsic semiconductors also plot the V-I characteristics of a silicon PN junction diode. (5)

3 Draw and explain the basic components of a public address system. (5)

4 What are universal gates? Why are they called so? List out the important properties of an ideal operational amplifier. (5)

5 Define modulation. What are the different types of analog modulation schemes? Explain the need for modulation. (5)

6 What is the super-heterodyne principle used in communication system.What are the typical frequencies used in AM and FM? (5)

7 List out the major advantages of optical fiber communication system. (5)

8 Explain the different components in CCTV system. (5)

PART B

Answer six questions,one full question from each module and carries10marks

Module I

9 a) Explain the principle of operation of transformer. What are the basic specifications of a transformer? (5)

b) What are the different types of capacitors based on the dielectric material used also explain the working principle of an electrolytic capacitor with suitable sketches. (5)

OR

10 a) With neat diagrams explain the principle and working of electromagnetic relays. (5)

b) What are the different classifications of resistors and also mention the importance of tolerance.Find the resistance value a resistor with the following colour code-Yellow,violet, gold and brown. (5)

Module II

11 Explain the input and output characteristics of common emitter amplifier and also draw its frequency response. (10)

OR

12 Explain the working of photodiode and LED with suitable diagrams. (10)

Module III

13 a) Explain the concept of feedback mechanism,what are the different types?What are the typical use of each type? (5)

b) Define peak inverse voltage (PIV). Explain the working of a full wave bridge rectifier. (5)

OR

14 What is an oscillator? What are the different types?Explain the working of an RC phase shift oscillator. (10)

Module IV

15 a) What is the importance of an operational amplifier? Design a non-inverting amplifier with a gain of 11. (5)

b) Explain the working of a function generator. (5)

OR

16 With suitable diagrams explain the working of digital storage oscilloscope. List out its advantages over analog CRO. (10)

Module V

17 a) Draw the spectrum of AM signal with a sinusoidal input and also specify the differences in AM and FM with respect to: (5)

i) Modulation index ii) Bandwidth

b) Draw the block diagram of FM super-heterodyne receiver and explain its working. (5)

OR

18 a) What are the major applications of satellite communication? What are the different types of orbits used? Which band is used for satellite communication? (5)

b) What are geostationary satellites? Why are they called so? What are their advantages? (5)

Module VI

19 a) Draw the block diagram of optical communication explain? (5)

b) Draw the block diagram of DTH system and explain its operation. (5)

OR

20 a) Explain the concept of cells and frequency reuse in mobile communication. (5)

b) Explain the working of cable TV system. (5)

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