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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST/SECOND SEMESTER B.TECH DEGREE EXAMINATION, JULY 2017

Course Code: **EC100**Course Name: **BASICS OF ELECTRONICS ENGINEERING**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions, each carries 2 marks.*

- 1 Write the resistance value for the given colour code orange, orange, yellow and gold? (2)
- 2 Briefly explain the working principle of transformer? (2)
- 3 What is the use of a relay? (2)
- 4 Differentiate between Zener breakdown and avalanche breakdown. (2)
- 5 What is meant by early effect in transistors? (2)
- 6 What is the basic principle behind the working of a photo diode? (2)
- 7 Draw the block diagram of public address system. (2)
- 8 State the working principle of an oscillator. (2)
- 9 Define (a) ripple factor (b) rectification efficiency. (2)
- 10 List the characteristics of an ideal op-amp. (2)
- 11 What are universal gates? Why are they called so? (2)
- 12 Draw the block diagram of a function generator? (2)
- 13 Explain the need for modulation? (2)
- 14 List out the advantages of geostationary satellites? (2)
- 15 Explain the concept of frequency reuse? (2)
- 16 Compare AM and FM. (2)
- 17 Mention the advantages of optical communication? (2)
- 18 Write the applications of CCTV. (2)
- 19 Write the principle of light transmission through optical fiber? (2)
- 20 Differentiate between single mode and multimode fibers? (2)

PART B*Answer any eight questions, each carries 5 marks.*

- 21 Explain the constructional details of: - (5)
i) Carbon composition fixed resistors ii) Carbon potentiometers
- 22 Explain any two types of fixed capacitors with neat diagram. (5)
- 23 Sketch the input and output characteristics of common emitter transistor configuration and explain briefly? (5)
- 24 How a barrier potential is developed in a p-n junction diode? (5)
- 25 With a neat circuit diagram explain the working of an RC coupled amplifier. (5)
- 26 Discuss the working principle of bridge rectifier with relevant waveforms. (5)
- 27 With suitable circuit diagram explain the working of an inverting amplifier using op-amp. Also derive its voltage gain? (5)

- 28 Draw the block diagram of a DSO and explain its working? (5)
- 29 How a Zener diode functions as a voltage regulator explain? (5)
- 30 Explain how AND, OR and NOT function can be implemented using universal gates? (5)

PART C

Answer any four questions, each carries 5 marks.

- 31 With a neat block diagram explain the working of AM super heterodyne receiver? (5)
- 32 Explain the basic principle of cellular communication? (5)
- 33 a) Write the equation of an AM wave and explain each term? (3)
- b) Draw the frequency spectrum and find the associated bandwidth? (2)
- 34 Explain the working of an optical communication system? (5)
- 35 Explain the basic parts of a cable TV distribution system? (5)
- 36 Draw the schematic of DTH system and explain its working? (5)
