

B.TECH. SEM -I ELECTRONICS / BIO MEDICAL / E & TC)
2014 COURSE (CBCS) : SUMMER - 2018
SUBJECT: ELEMENTS OF ELECTRONICS ENGINEERING

Day : **Friday**
Date : **25/05/2018**

S-2018-2211

Time : **10.00 AM TO 01.00 PM**
Max.Marks:60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of Non-programmable **CALCULATOR** is allowed.
- 4) Assume suitable data if necessary.

Q.1 a) How electron behaves when it is exposed to magnetic field? Explain in detail. (07)

b) What is the principle of cyclotron? (03)

OR

a) Illustrate the working of cathode ray oscilloscope in detail. (07)

b) What is the effect of parallel electric and magnetic field on an electron? (03)

Q.2 a) What is piezo resistivity? Explain piezo resistors in detail. (06)

b) How is diffusion constant 'D' related to mobility? (04)

OR

When a n-type Si semiconductor is exposed to light, what is the effect on generation and recombination of charges? (10)

Q.3 a) What is the difference between BJT and FET? (03)

b) How is Zener diode different from P-N Junction diode? Explain Zener diode in detail with the help of neat diagram. (07)

OR

What is field effect transistor? Explain JFET in detail. (10)

Q.4 a) How does capacitor filter remove the ripple? (05)

b) What is OPAMP? What are its applications? (05)

OR

a) Illustrate the construction and VI characteristics of LED? (07)

b) How does IC 555 work as timer? (03)

Q.5 a) In brief, illustrate the combinational and sequential circuits. (04)

b) Convert (06)

$(47)_{10}$ to $()_2$

$(126)_8$ to $()_2$

$(435)_{10}$ to $()_8$

OR

a) Multiply $(11001101)_2$ by $(101)_2$ (08)

Add $(11110101)_2$ to $(10101101)_2$

Divide $(11001.10)_2$ by $(101)_2$

Subtract $(00101010)_2$ from $(10001101)_2$

b) What is binary number system? (02)

Q.6 a) How does video recorder work? (05)

b) With the help of block diagram, explain television set. (05)

OR

a) What is DVD? How are DVDs recorded? (06)

b) What is the working principle of microwave oven? (04)

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