

**B.Tech. SEM -I Electronics / Bio Medical / E & TC) 2014 Course  
(CBCS) : WINTER - 2018**

**SUBJECT: ELEMENTS OF ELECTRONICS ENGINEERING**

Day: Saturday  
Date: 01/12/2018

**W-2018-2267**

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) Assume suitable data if necessary

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- Q.1** a) With proper diagram, explain the concept of magnetic deflection in CRT. (08)  
b) What is cyclotron? (02)
- OR**
- a) How does an electron behave in constant electric field? (05)  
b) What is potential? Derive its equation. (05)
- Q.2** a) Compare the electrical properties of Ge and Si. (06)  
b) How does thermistor work? (04)
- OR**
- a) What is Mass Action Law? (02)  
b) What happens when n-type semiconductor is exposed to light? (08)
- Q.3** a) Draw the symbols of all types of FET. (03)  
b) How does BJT work? Explain with proper diagram. (07)
- OR**
- a) What is Zener breakdown? Explain Zener diode with its characteristics. (06)  
b) What is capacitance? Give types of capacitors. (04)
- Q.4** a) What is SCR? Explain SCR operation in different modes. (08)  
b) What are the applications of timer circuit? (02)
- OR**
- a) Explain Op-Amp with symbol and block diagram. (05)  
b) How does bridge rectifier work? (05)
- Q.5** a) Implement XOR gate and XNOR gate using NAND gate. (06)  
b) Convert the following: (04)  
1.  $(59)_{10}$  to  $( )_8$   
2.  $(A15)_{16}$  to  $( )_8$
- OR**
- a) What is sequential circuit? Give example. (04)  
b) Subtract the number using 2's complement: (06)  
1. 71- 53  
2. 84- 23
- Q.6** a) What is the concept of radio receiver? (05)  
b) How does gaming console work? (05)
- OR**
- a) Explain DVD player. (05)  
b) How does fax machine work? (05)

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