Register No.:

# 718

## October 2017

*Time – Three hours*
*(Maximum Marks: 75)*

*[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B.*

*(2) Answer division (a) or division (b) of each question in PART-C.*

*(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C. ]*

### PART – A

1. What is an extrinsic semiconductor? Name the types of semiconductor.
2. What is a filter? List the types of filter.
3. Draw the circuit of self bias circuit.
4. Name the types of negative feedback.
5. What is an oscillator? Name any two types of oscillator.
6. Draw the equivalent circuit of UJT.
7. Draw the symbol of MOSFET (P channel and N channel).
8. What is a solar cell? Draw the symbol of solar cell.



### PART – B

9. Explain drift and diffusion current in PN junction.
10. Draw the circuit of a voltage regulator using zener diode.
11. Compare CB, CE and CC transistor configuration.
12. List the classification of amplifiers.
13. Name the classification of FET.
14. Explain SCR as a switch.
15. Expand LED, LDR. Draw the symbol of them.
16. Draw the circuit of Schmitt trigger using transistor.



[Turn over...

PART – C

17. (a) Explain the working of a bridge rectifier with relevant waveforms.

*(Or)*

(b) Explain about Zener diode construction and working principle with diagram.

18. (a) Draw the circuit of RC coupled amplifier and explain.

*(Or)*

(b) Explain about: (1) Transistor as an amplifier (2)Transistor as a switch.

19. (a) Explain the operation of Hartley oscillator.

*(Or)*

(b) Explain about operation and characteristics of UJT with simple diagram.



20. (a) Explain the VI characteristics of DIAC with a neat circuit diagram.

*(Or)*

(b) With diagram, explain the working principle of SCR and draw the transistor analogy of SCR.

21. (a) Explain the operation of an astable multivibrator using transistors. Draw the output waveforms.

*(Or)*

(b) Explain the working of (i) Positive clipper (ii) Negative clamper and (iii) LED.

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