

NOVEMBER/DECEMBER 2019

**BEL41 — SEMICONDUCTOR DEVICES
AND IC FABRICATION TECHNOLOGY**

Time : Three hours

Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is transistor?
2. Draw the symbol of NPN and PNP transistor and specify the leads.
3. Define amplification factor of FET.
4. List down any four advantages of MOSFET.
5. What is called UJT
6. Mention the difference between SCR and TRIAC.
7. What do you mean by schottky effect?
8. Give the application of photodiode.
9. Define integrated circuit.
10. Write down the merits of ICs.



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Describe the transistor action in detail.
Or
(b) Explain the operation of transistor as an amplifier.
12. (a) Discuss the construction and working of FET.
Or
(b) Write down the difference between FET and BJT.
13. (a) How the SCR works as a switch and rectifier.
Or
(b) Enumerate the characteristics of TRIAC.
14. (a) Explain the working of charge coupled device.
Or
(b) Give a brief note on LDR.
15. (a) Explain the fabrication of FET and MOSFET.
Or
(b) Briefly describe the thick film technology.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in detail the characteristics of common emitter configurations of a transistor.
17. Describe the construction, working and characteristics of MOSFET.
18. Discuss in detail unijunction transistor.
19. Enumerate the working characteristics of MIS and MIM diodes.
20. Explain the monolithic integrated circuit technology with neat diagram.

