



16 SB - 72

II Semester B.Sc. Degree Examination, May/June 2017
(CBCS) (New Syllabus) (2016 - 17 Syllabus)
ELECTRONICS - II
Paper - II : Semiconductor Amplifiers

Time : 3 Hours

Max. Marks : 80

Instruction : Draw neat and labeled diagrams wherever necessary.

SECTION - A

I. Answer **any ten** questions.

(10x2=20)

- 1) Draw the symbols of NPN and PNP transistor and specify its leads.
- 2) Write an expression for β in terms of α and γ .
- 3) Define the terms operating point and stability factor.
- 4) What is the difference between amplifier and faithful amplifier?
- 5) Define the power amplifier and mention its classification.
- 6) Express the voltage gain and power gain in dB.
- 7) Mention the application of JFET.
- 8) What do you mean feedback? In amplifier which type of feedback is used?
- 9) Draw the symbols of N-channel and P-channel of DE-MOSFET.
- 10) Write relation between the FET parameters.
- 11) Mention the application of Emitter follower applications.
- 12) Draw the circuit of positive clampers.

SECTION - B

II. Answer **any two** of the following.

(2x5=10)

- 13) Compare the voltage amplifier and power amplifier.
- 14) Explain the working of transistor voltage divider biasing method with circuit diagram.
- 15) Explain the construction, working and characteristics of N-channel JFET.

SECTION - C

(5x6=30)

III. Answer **any five** of the following.

- 16) Explain the cut-off, active and saturation regions of CE-transistor with neat diagram.
- 17) Write about emitter follower circuit operation and mention its applications.
- 18) Explain the working of class-A power amplifier and derive the expression for collector efficiency and power dissipation.
- 19) Describe the construction, working and characteristics of DE-MOSFET.
- 20) Explain the construction, working of SCR and mention its applications.
- 21) What do you mean stabilization? Explain need for stabilization.
- 22) Define the collector efficiency, distortion and power dissipation capability.

SECTION - D

(2x10=20)

IV. Answer **any two** questions.

- 23) a) Explain the working of RC-coupled amplifier with frequency response. (6+4)
b) Compare the BJT and FET.
- 24) a) Define the Class-A, Class-B and Class-C power amplifier. (6+4)
b) Mention the advantages of negative feedback.
- 25) a) Explain the circuit operation of positive and negative clippers. (4+6)
b) Write about UJT working operation and mention its applications.