

Seat
No.

Set R

**S.Y. (B.Tech. Electronics & Computer Engineering.) (Sem - I) (New)
(NEP CBCS) Examination: October/November – 2025
Electronic Devices and Circuit (ECEPCC-03)**

Day & Date: Friday, 19-12-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 70

- Instructions:** 1) Q. No. 1 is compulsory. It should be solved in the first 30 minutes in Answer Book Page no 03 (Starting page of the Answer Book).
Each question carries one mark
2) Don't forget to Mention question paper set (P/Q/R/S) on top on page.
3) Figures to the right indicates full marks.
4) Assume suitable data if necessary.

MCQ/Objective Type Questions

Duration: 30 Minutes

Marks:14

Q.1 Choose the correct answer.

14

- 1) Which of the following classes of amplifiers provides the highest efficiency?

a) Class A	b) Class B
c) Class AB	d) Class C
- 2) What is the conduction angle of a class A amplifier?

a) 90	b) 180
c) 270	d) 360
- 3) RC phase shift Oscillator provides phase shift of _____.

a) 60	b) 180
c) 45	d) 360
- 4) A 555 timer in monostable application mode can be used for _____.

a) Pulse position modulation
b) Frequency shift keying
c) Speed control and measurement
d) Digital phase detector
- 5) Zener diodes are also known as _____.

a) Voltage regulators	b) Forward bias diode
c) Breakdown diode	d) None of the mentioned
- 6) In Zener diode, for currents greater than the knee current, the v-i curve is almost _____.

a) Almost a straight line parallel to y-axis
b) Almost a straight line parallel to x-axis
c) Equally inclined to both the axes with a positive slope
d) Equally inclined to both the axes with a negative slope

- 7) Efficiency of a centre tapped full wave rectifier is _____.
a) 50% b) 46%
c) 70% d) 81.2%
- 8) In an NPN transistor, the arrow is pointed towards _____.
a) the collector b) the base
c) depends on the configuration d) the emitter
- 9) The inductor is placed in the L section filter because _____.
a) It offers zero resistance to DC component
b) It offers infinite resistance to DC component
c) It bypasses the DC component
d) It bypasses the AC component
- 10) The relation between α and β is _____.
a) $\beta = \alpha / (1 - \alpha)$ b) $\alpha = \beta / (1 + \beta)$
c) $\beta = \alpha / (1 + \alpha)$ d) $\alpha = \beta / (1 - \beta)$
- 11) What is the full form of TRIAC?
a) Triode attenuating current
b) Triode for alternating current
c) Trioxide for analogous current
d) Triode analogous current
- 12) A TRIAC is a 3-terminal device that is equivalent to two SCRs connected in _____.
a) Series b) Parallel
c) Antiparallel d) None of the above
- 13) How many layers of semiconductor does a TRIAC have?
a) 1 b) 2
c) 5 d) 4
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Day & Date: Friday, 19-12-2025

Max. Marks: 56

Time: 03:00 PM To 06:00 PM

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Assume suitable data if necessary.

SECTION – I**Q.2 Attempt Any Four.****16**

- a) Define the following terms.
 - i) PIV
 - ii) Ripple Factor
 - iii) Rectification efficiency
 - iv) TUF
- b) Explain widely used transistor biasing circuit with the help of circuit diagram.
- c) What is clamper? Explain working of positive clamper with neat circuit diagram and waveform. Explain working of voltage doubler.
- d) Explain V-I characteristics of n-channel JFET.
- e) Explain DC load line concept in BJT CE amplifier.

Q.3 Attempt Any Two.**12**

- a) Explain operation of Full wave rectifier. Give detailed analysis of following parameters:
V_o, I_o, V_r, I_r, ripple factor
- b) Draw h-model of BJT. Define all the h-parameters of BJT configured in Common Emitter Configuration.
- c) Explain n-channel enhancement MOSFET experimental setup and explain drain and transfer characteristics.

SECTION – II**Q.4 Attempt Any Four.****16**

- a) List four basic types of feedback? Draw and explain any one.
- b) Explain IC555 in Astable mode with an internal circuit diagram.
- c) Define class A power amplifier and write any two characteristics of class A amplifier.
- d) Explain IC555 pin configuration.

- e) With neat sketch, explain the construction, operation and characteristics of SCR.

Q.5 Attempt Any Two.

12

- a) Draw and explain the RC phase shift oscillator with neat diagram.
- b) Explain the effect of negative feedback on stability and bandwidth and gain.
- c) Explain the construction and working principles of DIAC and TRIAC with neat sketches.