

B.Sc. Semester - 6 (CBCS) Examination
May/June-2021 (NEW COURSE)
Solid State Electronics (Core)

Time: 1:30 Hours**Marks: 42****Instructions:**

1. Figure to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

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- Q.1(A) **Answer The Following Questions. (Any Two Out of Three)** (10)
1. Write a note on RC coupled amplifier.
 2. Derive expression for maximum efficiency of transformer coupled class A amplifier.
 3. Explain push-pull amplifier.
- Q.1(B) **Answer The Following Questions. (Any One Out of Two)** (04)
1. Explain direct coupled amplifier.
 2. A power transistor has max. junction temperature (T_{jmax}) 90°C and ambient temperature (T_{amb}) 50°C then find out value of total power dissipate. ($\theta = 10^{\circ}\text{C/W}$)
- Q.2(A) **Answer The Following Questions. (Any Two Out of Three)** (10)
1. Write a note on monostable multivibrator.
 2. Explain bistable multivibrator.
 3. Discuss biased positive clamper.
- Q.2(B) **Answer The Following Questions. (Any One Out of Two)** (04)
1. An astable having values $R_2 = R_3 = 10\text{K}\Omega$ and $C_1 = C_2 = 0.01\mu\text{F}$. Find the time period and frequency of the output waveform.
 2. Explain positive clipper.
- Q.3(A) **Answer The Following Questions. (Any Two Out of Three)** (10)
1. Explain transistor series voltage regulator.
 2. Describe series feedback voltage regulator.
 3. Write a note on classification of ICs based on structure.
- Q.3(B) **Answer The Following Questions. (Any One Out of Two)** (04)
1. Explain ordinary D.C. power supply.
 2. Give the comparisons between different types of ICs.
- Q.4(A) **Answer The Following Questions. (Any Two Out of Three)** (10)
1. Write a note on inverting amplifier.
 2. Explain non-inverting amplifier.
 3. Discuss how an OP-Amp can be used as an adder.
- Q.4(B) **Answer The Following Questions. (Any One Out of Two)** (04)
1. Write a note on OP-Amp as an integrator.
 2. Derive an expression for the output voltage of an OP-Amp differentiator.
- Q.5(A) **Answer The Following Questions. (Any Two Out of Three)** (10)
1. Write note on digital voltmeter.
 2. Explain multiplexer.
 3. Write a note on RS flip-flop.
- Q.5(B) **Answer The Following Questions. (Any One Out of Two)** (04)
1. Write a short note on CRO.
 2. Explain D flip-flop.
