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**D-3727**

**B. Sc. (Part III) EXAMINATION, 2020**

INFORMATION TECHNOLOGY

Paper First

**(Amplifiers and Oscillators)**

*Time : Three Hours ]*

*[ Maximum Marks : 50*

**Note :** Attempt any *two* parts from each question. All questions carry equal marks.

**Unit—I**

1. (a) What do you mean by power amplifier ? Write down the basic requirements of power amplifier.
- (b) Draw and explain single ended class-A amplifier.
- (c) What is push-pull amplifier ? Calculate power and efficiency of it.

**Unit—II**

2. (a) Differentiate between positive and negative feedback circuitry.
- (b) Draw and explain Astable multivibrator circuit.
- (c) Describe Colpitt's oscillator with suitable diagram.

**Unit—III**

3. (a) Draw and explain differential amplifier.

- (b) Discuss about common mode rejection ratio and slew rate in Op-Amp.
- (c) What do you understand by non-inverting amplifier ? Draw and explain non-inverting amplifier circuit using Op-Amp.

**Unit—IV**

4. (a) What do you mean by system buses ? Explain various kinds of system buses of 8085  $\mu$ p.
- (b) Describe implicit, immediate, direct and register indirect addressing mode with proper examples.
- (c) Write down any *four* data manipulation instructions of 8085  $\mu$ p with proper syntax and example.

**Unit—V**

5. (a) Differentiate between PUSH-PULL and CALL-RET instructions.
- (b) Write an assembly language program to transfer array of 10 data values from one location to another location.
- (c) What do you understand by branching ? Write down the various branch instructions with suitable examples.

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**(B-4) P. T. O.**

**(B-3)**