

Annual Examination, 2022

B.Sc. Part III

INFORMATION TECHNOLOGY

Paper I

(Amplifiers and Oscillators)

Time : 3 Hours]

[Max. Marks : 50

Note : Section 'A' is Objective type and is compulsory. It should be written on the **first page** of Answer-book. Section 'B' is Short answer type & Section 'C' is Long answer type.

Section 'A'

1. Class AB Operation is Operation.
 - (a) Similar to Class A
 - (b) Similar to Class B
 - (c) Similar to Class C
 - (d) None of the above.
2. In class B amplifier, the Output Current flows for :
 - (a) Less than half input cycle
 - (b) More than half input cycle
 - (c) Half input cycle
 - (d) Entire input cycle.

P.T.O.

3. The negative feedback in an amplifier leads to which one of the following ?
 - (a) Increase in current gain
 - (b) Increase in voltage gain
 - (c) Decrease in voltage gain
 - (d) Decrease in band width.
4. A Hartley Oscillator is commonly used in
 - (a) Radio receivers
 - (b) Radio Transmitters
 - (c) TV Receivers
 - (d) TV Transmitters.
5. The maximum rate that an output of an Operational amplifier can change :
 - (a) CMRR
 - (b) Slew rate
 - (c) Input offset voltage
 - (d) None of the above.
6. An astable multivibrator is also known as a :
 - (a) One-Shot multivibrator
 - (b) Free-running multivibrator
 - (c) Bistable multivibrator
 - (d) Monostable multivibrator.

5. Write a brief note on data transfer Operation.

Or

Write a short note on instruction Set.

Section 'C'

Note : Attempt five questions from this section by selecting one question from each question. Word limit 300 words.

1. What is pushpull power amplifier ? Explain harmonic distortion in pushpull power amplifier. Explain its efficiency.

Or

Classify power amplifier based on frequency and mode of operation.

2. Write a brief note on advantage of positive and negative feedback of amplifier.

Or

Briefly Explain Harmonic and Relaxation Oscillator.

3. Write a note on Silicon Controlled rectifier.

Or

Write application of OP-amp.

4. What is addressing mode ? How many types of addressing modes are there in 8085 microprocessor.

Or

Briefly Explain arithmetic and logical instructions in 8085 microprocessor.

5. Explain concept of looping using subroutine.

Or

What are the benefits of using Assembly language to program the microprocessor ?

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7. Which one of the following addressing technique is not used in 8085 microprocessor ?
- Register
 - Immediate
 - Register indirect
 - Relative.
8. The main purpose of accumulator register of 8085 is :
- Temporary data storage
 - Selection of Peripheral
 - Storing instructions
 - Used as primary pointer.
9. A machine language instruction format consists of :
- Operation Code field
 - Operation Code field & Operand field
 - Operand field
 - None of the above.
10. Handshaking mode of data transfer is :
- Synchronous data transfer

- Asynchronous data transfer
- Interrupt driven data transfer
- Level mode of DMA data transfer.

Section 'B'

Note : Attempt five questions from this section by selecting one question from each question. Word limit 100 words.

1. Write advantage of pushpull power amplifier.

Or

What is power amplifier ?

2. What is Oscillators ?

Or

Explain Monostable multivibrators.

3. Write characteristics of operational amplifier.

Or

What is differential amplifier.

4. What are the basic features of 8085 microprocessor ?

Or

Draw the 8085 pin diagram.