H-4/31/22 Roll No. ....

IV Semester Examination, 2022

M.Sc.

PHYSICS

Paper IV

(Microprocessor & Communication)

Time : 3 Hours] [Max. Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 sections. Section **A** is objective type/multiple choice questions with no internal choice. Section **B** is short answer type with internal choice. Section **C** is long answer type with internal choice.*

SECTION A 1×8=8

(Objective Type/Multiple Choice Questions)

Choose correct answer :

1. Address bus of µp 8085 uses .... BITS.

   (a) 2   (b) 4

   (c) 8   (d) 16

2. How many addressing modes are available with µp 8085 ?

   (a) 4   (b) 5

   (c) 6   (d) 7

P.T.O.

3. Maximum memory address the µp 8085 can support is .... kelobytes.

   (a) 16   (b) 32

   (c) 64   (d) 128

4. Which of the memory given below is not a type of ROM.

   (a) DROM   (b) PROM

   (c) EPROM   (d) EEPROM

5. The instruction ANI 40 H falls in the .... operation group.

   (a) Data transfer   (b) Arithmetic

   (c) Logical   (d) Machine control

6. In Delta Modulation the bit is :

   (a) N times the sampling frequency

   (b) N times the modulating frequency

   (c) N times the Nyquist criteria

   (d) None of the above

7. Miltimode graded index fibres are manufactured from materials with :

   (a) Lower purity

   (b) Higher purity than multimode step index fibre

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(c) No impurity

(d) Impurity as same as that of multimode step index fiber

8. In the optical fibre the propagation takes place due to the phenomenon of ....

(a) Total internal Reflection

(b) Refraction

(c) Defraction

(d) Polarization

SECTION B   6×4=24
(Short Answer Type Questions)

Note : Attempt *one* question from each unit.

Unit-I

1. Explain semiconductor memory in detail.

Or

Explain the Hard Disk Drive in the view of following question :

(a) What is it ?

(b) How many types of Hard disk to exist ?

(c) How does the Hard disk drive function ?

Unit-II

2. Explain functions of different registers in the µp8085.

Or

Explain indirect immediate and implicit addressing modes with at least one illustration of each.

Unit-III

3. Explain low pass and Band pass signals.

Or

Explain FSK and MSK ?

Unit-IV

4. Derive expression for Numerical Aperture. Explain the Acceptance Angle of a Fibre.

Or

Explain the propagation of laser through graded index fibre.

SECTION C   12×4=48
(Long Answer Type Questions)

Note : Attempt *one* question from each unit.

Unit-I

1. Explain different topologies of Networking. What is LAN ? Explain.

Or

(i) Differentiate between PROM and EPROM.

(ii) Write shorts notes on TYMNET and ARPANET.

Unit-II

2. Draw and explain the timing diagram of opcode fetch cycle.

Or

Draw a flowchart and write corresponding Assembly level program of μp8085 to find the largest of N numbers already stored in an array of memory.

Unit-III

3. Explain signal recovery through holding.

Or

Explain delta modulation with an example.

Unit-IV

4. (a) Explain number of modes and cut-off parameter.

(b) Explain splicing and connectors in fibre.

Or

(a) Explain different types of fibre cables.

(b) Explain HPSUU and HPSIR fibres.

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