VCD050423 S.Y.B.Sc. PHYSICS III SEMESTER IV 100MARKS TIME:3 HRS

Note: i) All the questions are compulsory.

ii) figures to the right indicate full marks.

iii) Use of non programmable calculator is allowed.

Note : Numbers indicate in the right hand side are marks

Q1A) Select the correct option **(12M)**

1)A positive gravitational anomaly indicates
i)an excess of mass. ii) a deficiency of mass
iii)a reversal of the gravitational field iv) none of these

2)The unit of intensity or field strength of the earth's field is _____.
i)mGal ii)Beta. iii) Tesla iv) Mega-tesla

3) which is a data transfer instruction in the following?

i) ADD ii) MOV B,C iii) CMP M iv) ANA D

4) What is the content of Accumulator after the instruction XRA A?

a) 00 H b) FF H c) depends on the data in accumulator

d) same as before the execution of the instruction

5) One way communication is called.....

a) half duplex b) full duplex c) monocomm d) simplex

6) For ideal AM, modulation index m is.....

a)0 b)1 c)less than 1 d)greater than 1

Q1B) Answer in one sentence. **(3M)**

i) What is full form SQUID system.
ii)What is bus in microprocessor?
iii)Define Modulation

Q1C) Fill in the blanks. **(5M)**

i) The _____ detects horizontal variations in susceptibility.
ii) Program counter is a ..... bit register.

iii) Microprocessor 8085 is -------pin IC.

iv)The process of transmitting two or more information signals simultaneously over same channel is called.....

v)During FM ,carrier..... remain constant.

Q. 2A) Answer the following questions.(ANY 1) **(8M)**

1)Explain in detail planetary evolution of earth.
2) What is field Instruments for Magnetic Measurement. Explain Proton Magnetometer in detail with a neat and labelled diagram.

Q. 2B) Answer the following questions.(ANY 1) **(8M)**

1)Give in detail Relation between Geology & Geophysics
2) Explain in detail Unstable Gravimeter with neat & labelled diagram

Q. 2C) Answer the following questions.(ANY 1) **(4M)**

1) Explain the different stages of earth formation. What are the eras in its formation?
2) Explain Spinner Magnetometer.

Q. 3A) Answer the following questions.(ANY 1) **(8M)**

i) Explain the bus structure of 8085 microprocessor, the width of which bus decides the limit on memory capacity.
ii) Show the bit position of various flags in the flag register of 8085. Mention the purpose of the flag register.

Q. 3B) Answer the following questions.(ANY 1) **(8M)**

i) State advantages and disadvantages of machine, language, programming and that of assembly language.

ii) What are the addressing modes available in 8085 explain each with two example.

Q. 3C) Answer the following questions.(ANY 1) **(8M)**

i) What does STAX D instruction Do? what flags are affected?
ii) What is the difference between machine level program and assembly language program

Q. 4A) Answer the following questions.(ANY 1) **(8M)**

i)Define Amplitude Modulation? Derive the mathematical expression for it.