

Ans Key SEI II
Time: 3Hrs

Marks:-100

- ① 67327
- Q1. A) Select correct answer (12)
- 1 (a) an excess of mass
 - 2 earthquake
 - 3 MOV A, C
 - 4 ANI,00h
 - 5 d) Fluorescent lamp
 - 6 a) Modulation of analog carrier by an analog signal
- B) Answer in one sentence (3)
- 1 Radioactive pollution defined as the emission of high energy radioactive invisible particles into air, water or land due to human activities in the form of radioactive waste.
 - 2 op-code : STA operand : 3400h
 - 3 Radiation exposure is a measure of the ionization produced in air by x-rays or gamma rays.
- C) Fill in the Blanks (5)
- 1 Ground water
 - 2 Hawaiian
 - 3 Number of bytes : 1
 - 4 RAR : logic operation or instruction
 - 5 Bit rate
- Q2. A) Attempt any one (8)
- 1 **Definition-----(1mark)**
Seismology is the study of earthquakes and seismic waves that move through and around the earth. A seismologist is a scientist who studies earthquakes and seismic waves.
Definition -----(1mark)
Seismic waves are the waves of energy caused by the sudden breaking of rock within the earth or an explosion. They are the energy that travels through the earth and is recorded on seismographs.
Different types and diagram ----- (6mark)

Body Waves
P waves and S Waves
Surface Waves
1] Love Waves
2] Rayleigh Waves

 - 2 Explanation of 'Environmental Management'------(4mark)
- Importance of Environmental Management -----(4 marks)
- Attempt any one**
- B) Explanation of three main parts of internal structure --(4Mark) (8)
Neat diagram and its explanation -----(4Mark)
- 1 Different methods used for determination of the age of earth------(2marks)
Explanation of any one in detail------(6marks)
- Radiometric Dating
Annual Rock Layerings
Incremental Dating

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Cosmogenic Nuclide Geochronology

Paleomagnetic Dating

Magnetostratigraphy

Luminescence Dating

2 **Definition**-----**(1mark)**

Seismology is the study of earthquakes and seismic waves that move through and around the earth. A seismologist is a scientist who studies earthquakes and seismic waves.

Definition -----**(1mark)**

Seismic waves are the waves of energy caused by the sudden breaking of rock within the earth or an explosion. They are the energy that travels through the earth and is recorded on seismographs.

Different types and diagram ----- (6mark)

Body Waves

P waves and S Waves

Surface Waves

1] Love Waves

2] Rayleigh Waves

Explanation of 'Environmental Management'-----**(4mark)**

Importance of Environmental Management -----**(4 marks)**

C) **Attempt any one** (4)

1 Explanation of three main parts of internal structure --**(4Mark)**

Neat diagram and its explanation -----**(4Mark)**

2 Different methods used for determination of the age of earth-----**(2marks)**

Explanation of any one in detail-----**(6marks)**

Radiometric Dating

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Q3. A) Attempt any one (8)

1 All 8 bit , Special purpose A,F functions3

General purpose B,C D E H L functions2

Reg pairing HL,BC,DE purpose.....2

16 bit registers : program counter , Stack pointer.....1

2 ALU performs the arithmetic and logical operations Accumulator & Flag

registers are the part of ALU.2

Address bus : 16 bit , unidirectional2

data bus :8 bit bidirectional2

Multiplexing2

B) Attempt any one (8)

1 Initialisation2

3

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- Data acquisition & processing2
 Decision making2
 Result storage.....2
- 2 i) MVI C , 56h : C : 56h
 ii) MOV A,C A:56 , C = 56h
 iii) RRC A:2Bh
 iv) ADI , 78h A: A3h
 v) LXI H , 3200h H : 32h L: 00h
 vi) MOV M,A : 3200h : A3h
 vii) INX H : HL : 3201h
- C) Attempt any one (4)
- 1 a) AND B1
 b) CMA1
 c) SUI, 73h.....1
 d) LXI D,2400h.....1
- 2 a) CMP B and SUB B : In both the cases all the flags are affected. In CMP B , content of A will not change after the execution , only B will be compared with A . In SUB B, B will be subtracted from A and the difference will be stored in A.2
 b.) DCR D and DCX D : DCX D : Memory location will be 3455h No flag will be affected
 DCR D : data will be decremented from 74h to 73h . All flags except CY will be affected.....2
- Q4. A) Attempt any one (8)
- 1 Properties of α particles-3 marks
 Properties of β particles-3 marks
 Properties of γ particles-2 marks
 2 Broadband communication with examples- 4 marks
 Advantages of broadband communication- 4 marks
- B) Attempt any one (8)
- 1 Definition of Radiotherapy-2 marks
 External Radiotherapy-2 marks
 Internal Radiotherapy-2 marks
 Systematic Radiotherapy-2 marks
 2 Definition of Digital signal and Digital communication- 2 marks
 Advantages over analogue communication-6 marks
- C) Attempt any one (4)
- 1 $E_{\text{effective}} = W_1 E_1 + W_2 E_2$
 $= 25.2 \text{ mSv}$ - 3marks
 Comment- 1mark
- 2 $l = \frac{\lambda}{2} = \frac{c}{2f}$ 2 marks
 $l = \frac{3 \times 10^8}{2 \times 88 \times 10^6} = 1.70 \text{ m}$ 2 marks
- Q5. Attempt any Four (20)

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- 1 Diagram and labeling ----- (5 mark)
- 2 Any four points----- (5 marks)
- 3 flag format: The bit position of the flip flop in flag register is:.....2

D ₇	D ₆	D ₅	D ₄	D ₃	D ₂	D ₁	D ₀
S	Z		AC		P		CY

Name of each flag & when it is set or reset 3

1.Sign(S) 2.zero(z) 3.Auxiliary carry(AC) 4.Parity(P) 5.Carry(C)

- 4 addressing modes: Any 2 modes : Naming :2 marks Example :3 m

i) Register MOV C,B ii) Direct IN , input port address

iii)Immediate : MVI ,8 bit iv) Implied or implicit : RAR ,CMA

v)Indirect : MOV M,A

- 5 Ionization, Fluorescence, Phosphorescence, Thermoluminescence, Photographic effect.
- 6 Block diagram and waveforms. -2 marks
Stage I: Received signal amplified
Stage II: Resultant signal is rectified
Stage III: From rectified signal high frequency component is removed.-
3 marks
