

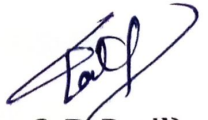
Vivekanand College, Kolhapur (Autonomous)
Department of Electronics
Notice

Date: 23.11.2022

All the students of B.Sc. II Electronics are hereby informed that their internal examination for Semester III will be conducted in offline mode as per attached schedule.

Paper	Section	Section title	Marks	Date	Time
IV DSC - 1005C	I	Electronic Communication	15	29.11.2023	01:00 to 02:00 pm
IV DSC- 1005C	II	Microprocessor 8085	15	29.11.2023	01:00 to 02:00 pm




(Dr. C. B. Patil)
Head

Department of Electronics
Vivekanand College, Kolhapur.

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॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

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08043

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

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Roll No. : 7725

Class : B6C-II (6Y)

Signature
of
Supervisor

Subject: Electronics - I

Test / Tutorial No. :

Div. :

Q1 i] Demodulation is done in _____

→ a] Transmitter

ii] In Amplitude Modulation, if the maximum modulating signal frequency is 5 kHz then required bandwidth for signal is _____

→ c] 15 kHz

iii] In AM, when $E_m > E_c$ then this condition is known as _____

→ c] ideal condition

iv] In Amplitude modulation, modulation index is ---

→ a] V_m/V_c

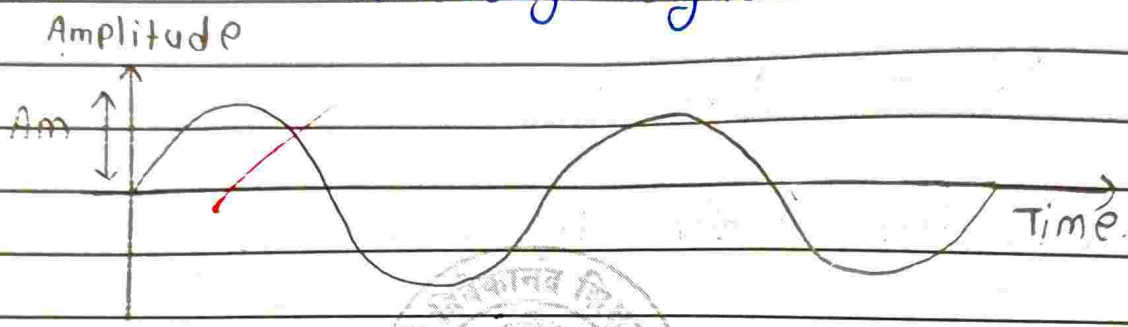
v] VCO produces an output signal whose frequency is proportional define FM to the input signal. ---

→ voltage

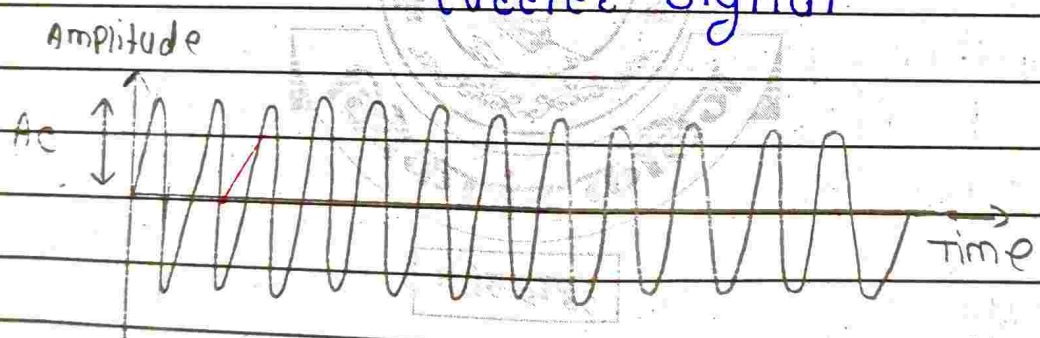
Q2 2] The Amplitude modulation (AM) is the modulating signal

The first modula Amplitude modulation signal is message signal, the next one is carrier signal and last one is Amplitude modulation signal

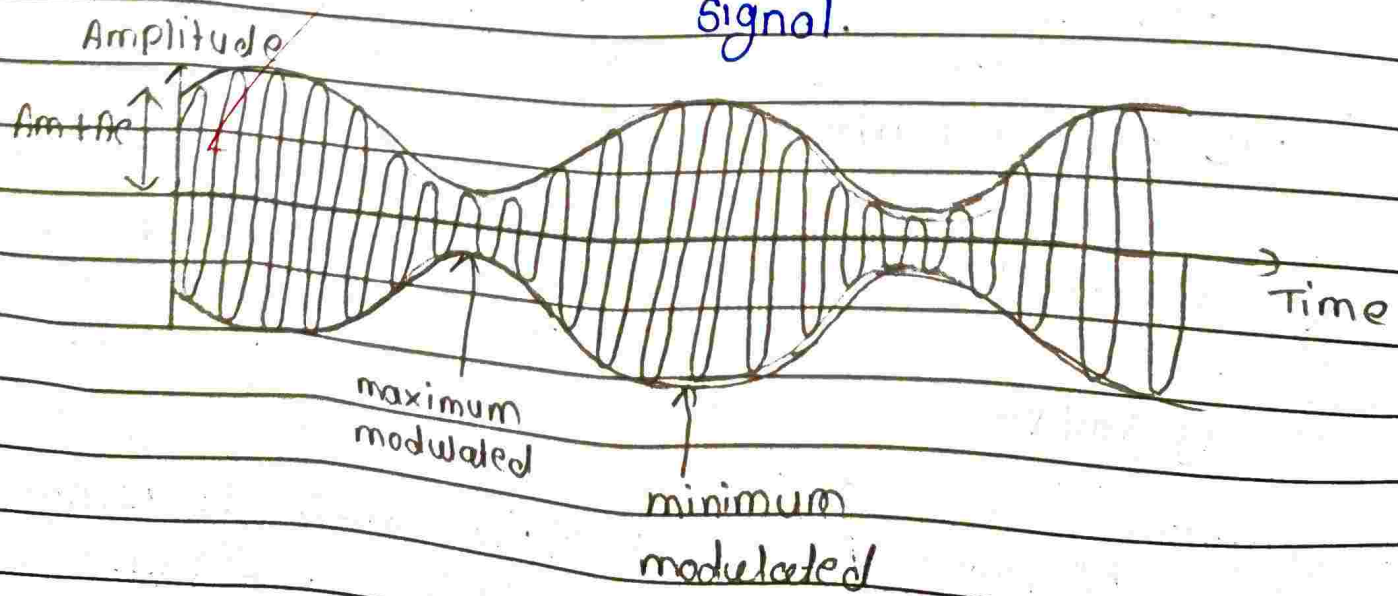
Message signal



carrier signal



Amplitude modulated signal.



Define the trigonometric function is Amplitude modulated signal

$$\therefore u_m = \sin 2\pi f_m t \quad \text{----- (1)}$$

u_m = instantaneous of the ^{information} modulation wave

f_m = frequency of the modulation signal

v_m = Peak amplitude of information wave

$$\therefore u_c = \sin 2\pi f_c t \quad \text{----- (2)}$$

u_c = instantaneous ~~addressing~~ carrier signal

f_c = frequency carrier signal

v_c = Peak amplitude of carrier signal

v_c = Peak amplitude of carrier signal

$$u_1 = v_c + u_m = v_c + v_m \sin 2\pi f_m t$$

Thus we can write the instantaneous value of the modulated (u_2 or u_{am}).

$$u_2 \text{ (} u_{am} \text{)} = u_1 \cdot \sin 2\pi f_c t$$

$$u_2 = (v_c + v_m \sin 2\pi f_m t) \sin 2\pi f_c t = v_c \sin 2\pi f_c t + (v_m \sin 2\pi f_m t) (\sin 2\pi f_c t)$$

By using the trigonometric function

$$\sin A \sin B = \frac{\cos(A-B)}{2} - \frac{\cos(A+B)}{2}$$

$$v_{am} = v_c \sin 2\pi f_c t + \frac{v_m}{2} \cos 2\pi t (f_c - f_m) - \frac{v_m}{2}$$

$$\cos 2\pi t (f_c + f_m)$$

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08030

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Subject : Electronics - II

Test / Tutorial No. :

Div. :

Q.1 1] _____ register is used to indicate status of the result in 8085

→ CF flag ✓

2] _____ signal is used to Demultiplexing AD₀-AD₇ bus in 8085

→ IO/M ✓

3] The addressing mode of STA 2000H instruction is _____

→ implicit ✓

4] If register A = 59H, after execution of instruction ANI, 0FH the content of accumulator will be _____

→

5] In 8085, conditional Jump instruction/s is/are _____

→ all of these ✓

Q2

Q1) 8085 microprocessor of the addressing mode. The addressing is the refers of the compare component and specified addressing mode. In this types of the addressing mode is as follows.

- i] Register addressing mode.
- ii] Direct addressing mode.
- iii] indirect addressing mode.
- iv] immediate addressing mode.
- v] implicit addressing mode.

i] register addressing mode

The register addressing mode is refers of the specific in the addressing mode.

Example :-

1] MOV A, B ; Moved in the register B to register A.

2] ADD D ; Add. Add adding Accumulator is Data memory location.

ii] Direct addressing mode.

In the direct addressing mode is the specific of the component location in direct mode.

Example :-

1] MVI 6000 H ; moveable moveable is in at the 6000 H. memory connection.

2] IO @ 10H; The read the data from the addressing 10 H.

iii] Indirect addressing mode.

The indirect addressing mode is refers specified does not in with in the addressing mode addressing of the operand is specified Example:- by the register pair The 16-bit address store. in the pair memory location act as pointer

Ex 1:-

i) LXI H, 2000H; load HL pair with immediate data 2000H

iv) Immediate Addressing mode.

In immediate addressing mode the one of the operands is immediate data

Example:-

i) MVI A, 05H; move 05 to the register A.

v] Implicit addressing mode!

The implicit addressing mode operand is not specified within the instruction

i) DAA, Decimal

Atyare Sontapur

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08302

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8/15/2

Subject : ELECTRONIC

Test / Tutorial No. :

Div. : C

Q1

i] Demodulation is done in b) Radio receiver

ii] In Amplitude Modulation, if the maximum modulating signal frequency is 5 KHz then required bandwidth for signal is 10 KHz

iii] In AM, when $E_m > E_c$ then this condition is known as under modulation

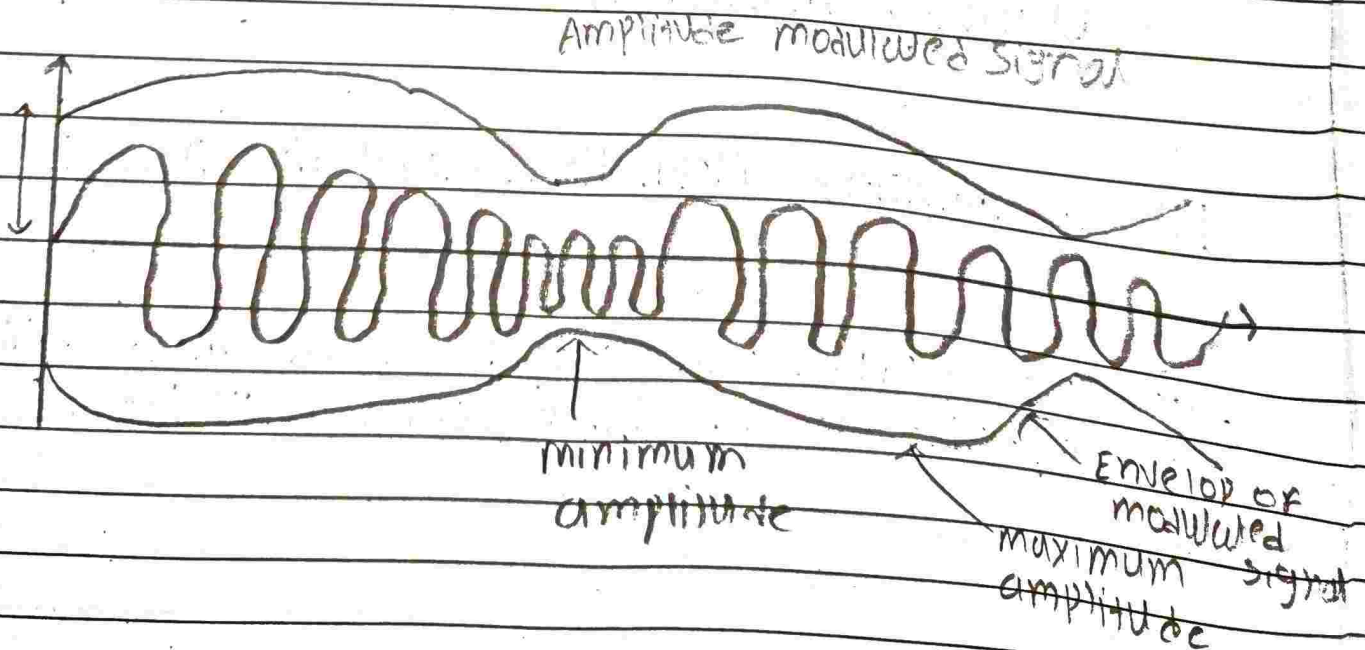
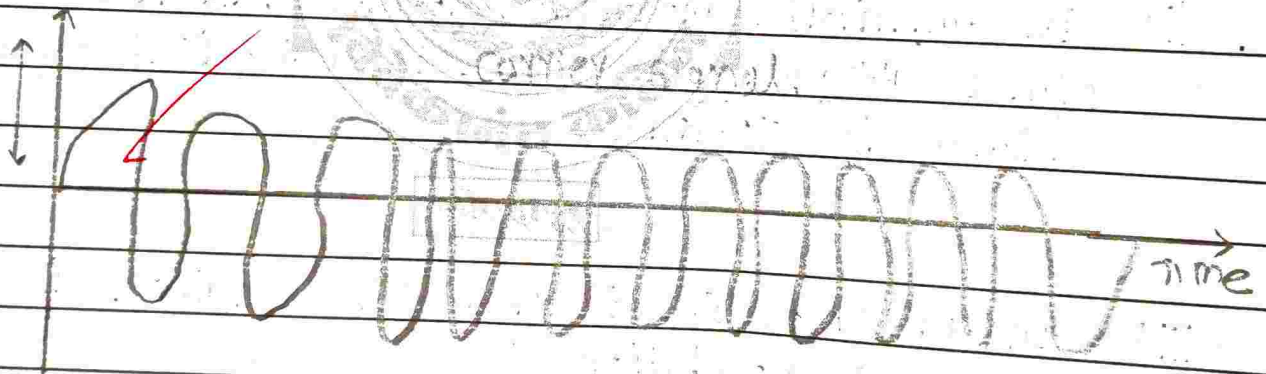
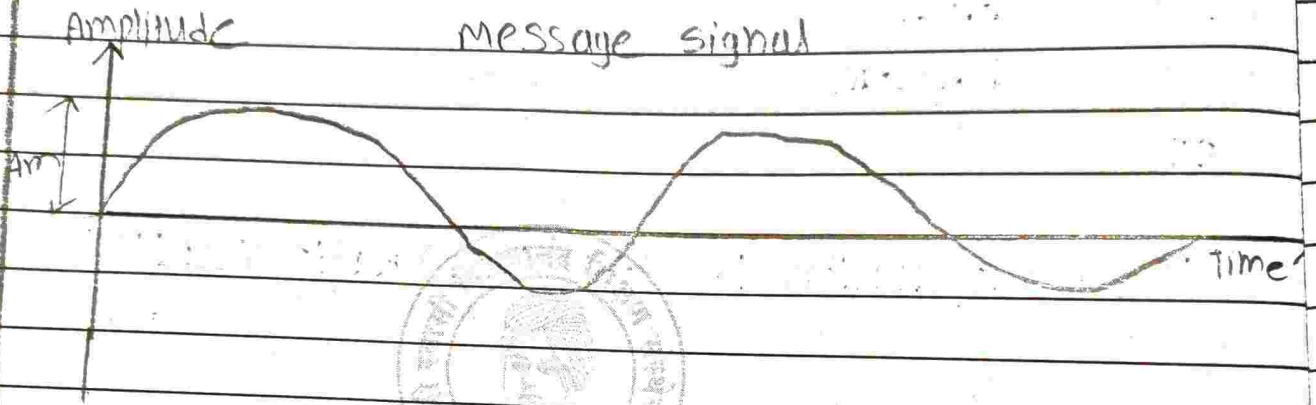
4
iv] In Amplitude Modulation, modulation index is $a_1 V_m / V_c$

v] VCO produces an output signal whose frequency is proportional to the input signal () resistance

Q2

2 Amplitude of modulation:

Amplitude modulation is the process in which amplitude of carrier signal is changed in accordance with amplitude of modulating signal. During the frequency & phase of carrier signal remain constant.



Using trigonometric function we can express the sine wave modulating signal with the simple expression

$$v_m = V_m \sin 2\pi f_m t \quad \text{--- (1)}$$

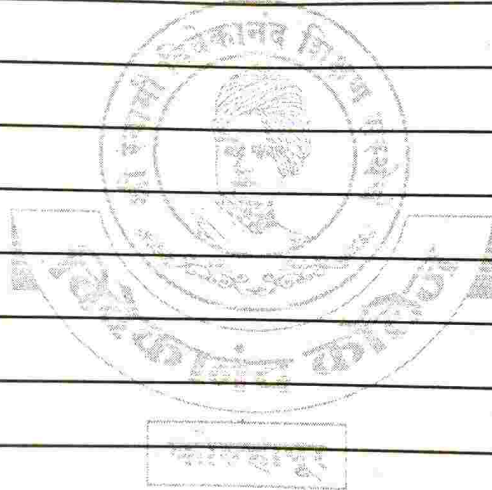
where,

v_m - instantaneous values of information signal

V_m - peak amplitude of information signal

f_m - frequency of modulating signal.

A carrier signal can be expressed with a similar formula.



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08301

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Signature
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Supervisor

Subject : Electronic

Test / Tutorial No. :

Div. : C

Suppliment No. :

Roll No. : 7723

Class : B.SC-II

Q1

i] b7 Flag register is used to indicate status of result in 8085

ii] c7 50.51 signal is used to demultiplexing ADO-AD7 bus in 8085

iii] The addressing mode of STA 2000H instruction is b7 Register indirect

iv] If register A = 54H. After execution of instruction ANI F0H the content of accumulator will be b7 50H

v] In 8085, conditional jump instructions are d) all of these

2

2 Flag:

The ALU includes five flip-flops which are set or reset after an operation according to data conditions of result in the accumulator & other register. They are called zero (Z) ~~data~~ carry (CY), sign (S), parity (P) & auxiliary carry (AC) flags. The most commonly used flags are zero, carry & sign. The microprocessor uses these flags to test data conditions for example after an addition of two numbers if the sum in the accumulator is larger than eight bits the flip-flop used to indicate carry called the carry flag (CY) is set to one.

Examples of flags:

- i) Sign Flag (S)
- ii) Zero Flag (Z)
- iii) Auxiliary Flag (AC)
- iv) Parity Flag (P)
- v) Carry Flag (CY)

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08009

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Subject : Electronics - I

Test / Tutorial No. : Internal Examination.

Div. :

Q.1

i) Demodulation is done in -----

→ b] Radio receivers

ii] In amplitude, if the maximum modulating signal frequency is 5 KHz then required bandwidth for signal is -----

→ c] 15 KHz

iii] In AM, when $E_m > E_c$ then this condition is known as -----

→ b] over modulation

iv] In Amplitude Modulation, Modulation index is -----

→ a] V_m/V_c

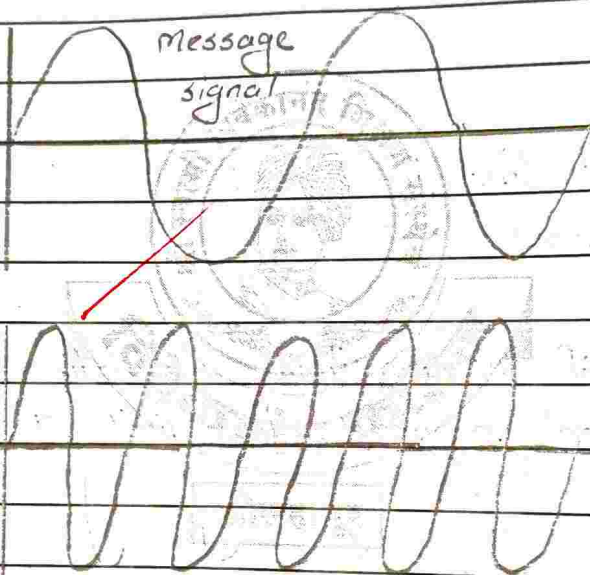
v] VCO produces an output signal whose frequency is proportional to the input signal -----

→ a] voltage.

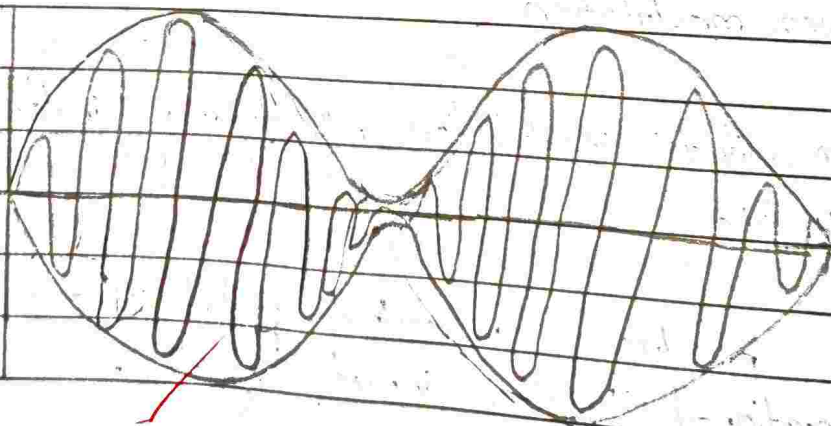
Q.2.

2) Amplitude modulation.

Amplitude modulation is the process in which amplitude signal is change. in accordance in which amplitude modulation signal during the frequency and phase of carrier signal remains constant.



2) 2

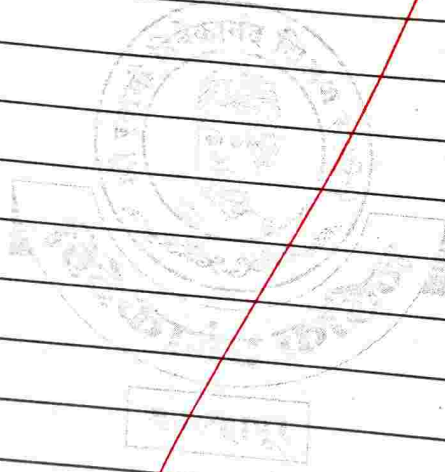


Q.2

1]

frequency modulation:

frequency modulation is the type of ^{carrier wave} where the ~~type of modulation~~ frequency changes with in response to the modulating signal ~~and~~ instantaneous amplitude while maintaining the ^{phase} ~~time~~ and amplitude constant.



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Subject : Electronics - II

Test / Tutorial No. : Internal Examination

Div. :

Q.1

1] ----- register is used to indicate status of the result in 8085.

→ a) ACC. ✓

2) ----- signal is used to Demultiplexing ADO-AD7 bus in 8085.

→ b) ALE ✓

3) The addressing mode of STA 2000H instruction is ---

→ d) implicit ✓

4) If register A = 54H, after execution of instruction ANI, 0FH the content of accumulator will be ---

→ iii) 05H ✓

5) In 8085, conditional jump instruction's/is/are ---

→ c) JNZ ✓

✓
✓
↓

Q.2

2]

Flag register.

An 8 bit register, also called as flag register. However it is not used as a register. Five bit position out of eight are used to store the output of the five flip-flop the condition by accessing the register through an instruction these flags have critical importance in this design making process of the microprocessor. The condition (set or reset) of the flag are used through the software instruction.

D₇ D₆ D₅ D₄ D₃ D₂ D₁ D₀

Example :-

The instruction JNC is implemented to change the sequence of a program when cy flag is set. The details understanding flag is essential is writing assembly language program.

4534 = 8/15 = 8/15

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08048

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Class : BSC-II

Subject: Electronics

Test / Tutorial No. : Internal Examination.

Div. :

Section - I Electronic Communication

Q.1

i] Demodulation is done in
→ b] Radio receiver

ii] In Amplitude Modulation, if the maximum modulating signal frequency is 5 kHz then required bandwidth of signal is
→ c] 15 kHz

iii] In AM, when $F_m > F_c$ then this condition is known as

→ b] over modulation

4] In Amplitude modulation, modulation index is

→ $\frac{V_m}{V_c}$

5] VCO produces an output signal whose frequency is proportional to the input signal

of voltage

Q.2

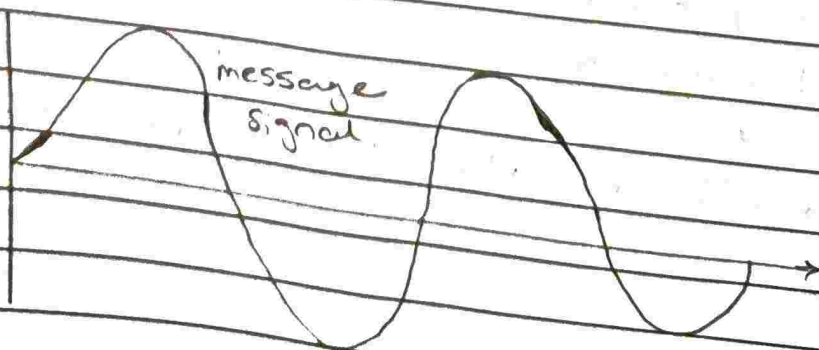
Q.2

→

Amplitude modulation

Amplitude modulation is the process in which amplitude varies according to the change in amplitude of the message signal. During the frequency and phase of the carrier signal remain constant.

AM waveforms diagram.

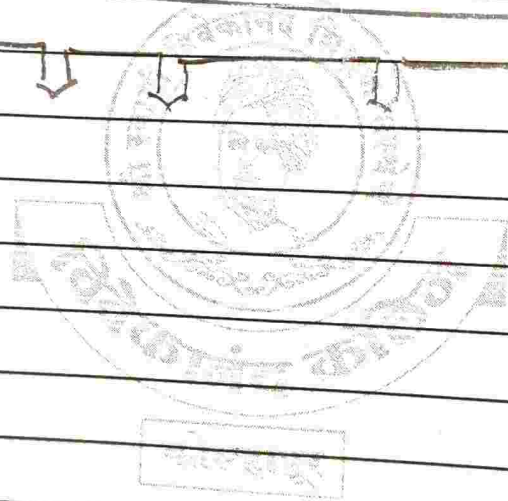


Q.2

→

1) Define FM and frequency.

Frequency modulation is the type of the wave whose wave frequency changes in response to the modulation signal. Instantaneous amplitude is constant and amplitude constant.



9

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Roll No. : 7727

Test / Tutorial No. : Internal Examination

Class : BSc - II

Div. :

Section - II Microprocessor 8085

Q.1

1] register is used to indicate status of the result in 8085.

→ a) Acc

2) Signal is used to Demultiplexing AD₀-AD₇ bus in 8085.

b) ALE

3) The addressing mode of STA 2000H instruction is.

1] implicit

4) If register A = 54H, after execution of instruction ANI, F0H the content of accumulator will be

iii) 05H

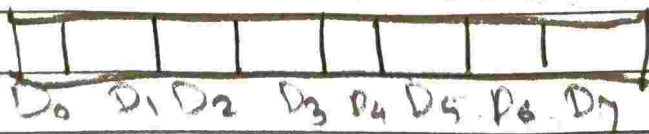
5) In 8085 Conditional Jump instructions is err

c) JNZ

Qr2

→ 2) Flag register

An 8-bit register also called as flag register. However, it is not used as a register five bit position, out of eight are used to record the output of the five flip-flop the condition by accessing the register through an instruction these flag have critical importance is this: decision making process of the microprocessor the condition (set or reset) of the flag are used through



Example.

The instruction, Jc, is implement
of change the sequence of a program
when cy flag is set. The details
understanding flag is essential, is
writing assembly language program.

