

No. of Printed Pages : 4 181033/171033/ 121033  
Roll No. .... /031033/106555

**3rd Sem / Eltx., IC, Power Eltx., Elect. & Eltx. Engg.  
Subject:- Principles of Communication Engineering**

Time : 3Hrs. M.M. : 100

## **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Number of sidebands in F.M. are \_\_\_\_\_ (CO3)  
a) 0 b) 2  
c) 4 d) Infinite

Q.2 Height of antenna should be \_\_\_\_\_ wave length (CO1)  
a) Half b) one  
c) quarter d) double

Q.3 In A.M, Suppression of carrier results in savings of approximately \_\_\_\_\_ % of total power. (CO2)  
a) 17 b) 33  
c) 66 d) 80

Q.4 Which type of modulation is done in TDM? (CO7)  
a) PAM b) PPM  
c) PCM d) PWM

Q.5 The first step in F.M detection is to convert \_\_\_\_\_ (CO6)  
a) F.M to P.M b) F.M to A.M  
c) F.M to P.A.M d) F.M to P.W.M

(1) 181033/171033/ 121033  
          /031033/106555

- Q.6 This \_\_\_\_\_ modulator is example of indirect of F.M Generation? (CO4)  
a) Reactance                  b) Varactor diode  
c) Reactance tube            d) Armstrong

Q.7 If local oscillator frequency is 1000 KHz, If is 40 KHz, then receiver frequency will be \_\_\_\_ KHz. (CO5)  
a) 25                          b) 1040  
c) 960                        d) 4000

Q.8 The collector modulator uses \_\_\_\_\_ portion of the characteristics of semiconductor device. (CO4)  
a) Linear                      b) Non-linear  
c) cut-off                     d) Saturation

Q.9 Which is digital in nature among the below \_\_\_\_\_. (CO7)  
a) PAM                        b) PWM  
c) PPM                        d) PCM

Q.10 The ability of a communication system to reject unwanted signal depends upon its \_\_\_\_\_. (CO5)  
a) Sensitivity                b) Selectivity  
c) Fidelity                    d) Detection

**SECTION-B**

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 The band width of narrow band FM is \_\_\_\_\_. (CO3)

Q.12 Expand the term ISB. (CO2)

Q.13 Single side band contributes approximately % age of total power in A.M. (CO2)

(2) 181033/171033/ 121033  
          /031033/106555

- Q.14 In F.M, band width is more than A.M. (True/False) (CO3)
- Q.15 Define Carson's rule. (CO3)
- Q.16 Draw a PPM Wave. (CO7)
- Q.17 Pre-emphasis is performed in \_\_\_\_\_. (A.M/F.M) (CO3)
- Q.18 Base modulators are used for low power requirements. (True/False) (CO4)
- Q.19 Expand PLL. (CO6)
- Q.20 Name the most common semiconductor device used for demodulation of A.M waves. (CO5)

### SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Define modulation, why it is required? (CO1)
- Q.22 Draw & explain a modern communication system. (CO1)
- Q.23 A carrier signal of amplitude 100V is amplitude modulated resulting in maximum modulated carrier voltage of 150V. Calculate its modulation index. (CO2)
- Q.24 Define SSB, Write its applications & advantages. (CO2)
- Q.25 Write relative advantages and disadvantages of A.M over F.M. (CO3)
- Q.26 Explain in brief the working of BASE modulator. (CO4)
- Q.27 What is function of limiter in F.M, Explain. (CO6)

(3) 181033/171033/ 121033  
/031033/106555

- Q.28 Define frequency deviation in F.M, Show how it is related with modulating frequency and bandwidth. (CO3)
- Q.29 Compare features of P.M with F.M. (CO3)
- Q.30 Draw & Explain the schematic of varactor diode modulator. (CO4)
- Q.31 Show how carrier is stabilized in F.M? (CO4)
- Q.32 Write different problems associated with the diode detector circuit for demodulation of A.M. (CO5)
- Q.33 Show how PPM is derived from PWM? (CO7)
- Q.34 Write a short note on T.D.M. (CO7)
- Q.35 State & Explain sampling theorem. (CO7)

### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 With the help of wave forms, explain the concept of amplitude modulation. derive expression for amplitude modulated wave. (CO2)
- Q.37 Draw and explain the Square law modulator circuit. (CO4)
- Q.38 With the help of circuit diagram, explain Ratio detector. (CO6)

**(Note :** Course Outcome (CO) mentioned in the question paper is for official purpose only.)

(1180)

(4) 181033/171033/ 121033  
/031033/106555