

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

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- 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)

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- 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)

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- 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.)

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