

Unit: 10. Communication Systems (20 marks)	
1 mark → 2 Questions	5 mark → 1 Question 62
3 mark → 1 Questions 50	10 mark → 1 Question 70

UNIT – 10. Communication System – 1 mark Questions

- Skip distance is the shortest distance between ----
a) the point of transmission and the point of reception
 b) the uplink station and the down link station
 c) the transmitter and the target
 d) the receiver and the target. [S-08]
- The radio waves after refraction from different parts of ionosphere on reaching the earth are called as ----
 a) ground waves **b) sky waves**
 c) space waves d) microwaves
- Through which mode of propagation, the radio waves can be sent from one place to another-----
 a) Ground wave propagation b) sky wave propagation
 c) space wave propagation **d) all the above** [dmp]
- In amplitude modulation, the bandwidth is ----- [M-12]
 a) equal to the signal frequency **b) twice the signal frequency**
 c) thrice the signal frequency d) four times the signal frequency
- In amplitude modulation ----
a) the amplitude of the carrier wave is in accordance with the amplitude of the modulating signal
 b) the amplitude of the carrier wave remains constant
 c) the amplitude of the carrier wave varies in accordance with the frequency of the modulating signal
 d) the modulating frequency lies in the audio range. [S-12]
- High frequency waves follow ---- [M-06,J-06]
 a) the ground wave propagation b) the line of straight direction
c) ionospheric propagation d) the curvature of the earth
- In TV, blanking pulse is applied to ----- [M-06,S-09,M-11]
 a) horizontal plates b) vertical plates
c) control grid d) filament
- In TV transmission, the picture tube should not be scanned during the return journey of the scanning. This is done by
a) blanking pulse b) saw tooth potential c) horizontal synchronizing pulse d) vertical synchronizing pulse [dmp]
- Vidicon camera works on the principle of : [J-13]
a) photo conductivity b) thermoelectric effect
 c) thermionic emission d) seebeck effect
- The RF channel in a radio transmitter produces -----
 a) audio signals **b) high frequency carrier waves**
 c) both audio signal and high frequency carrier waves
 d) low frequency carrier waves. [M-07,M-09,M-10,O-11,M-13]
- In interlaced scanning time taken to scan one line is ---
 a) 20 ms **b) 64 μs** c) 50 ms d) 100 μs [J-08]
- Man made 1st artificial satellite ---- (S-07)
 a) Aryabhata **b) Sputnik**
 c) Venera d) Rohini
- The printed documents to be transmitted by fax are converted into electrical signals by the process of ---
 [M-08,J-08,S-08,J-09,10,O-10,M-11,O-11,J-13,M-13]
 a) reflection **b) Scanning**
 c) modulation d) light variation
- The audio frequency range is ---- [M-08]
 a) 20 Hz to 200000 Hz b) 20 Hz to 2000 Hz

c) 20 Hz to 2000000 Hz

d) 20 Hz to 20000 Hz

- The purpose of dividing each frame into two fields so as to transmit 50 views of the picture per second is ----
 a) the fact that handling of higher frequencies is easier
 b) that 50 Hz is the power line frequency in India
 c) to avoid unwanted noises in the signals
d) to avoid flicker in the picture [J-08,M-12]
- The principle used for transmission of light signals through optical fibre is --- [O-06,M-10, S-12]
 a) refraction b) diffraction
 c) polarization **d) Total internal reflection**
- Draw the block diagram of an oscillator and mention its components. Of 105.03 MHz, when modulated by a signal. The carrier swing is ----
 a) 0.03 MHz **b) 0.06 MHz**
 c) 0.03 kHz d) 60 MHz [M-09]
- Digital signals are converted into analog signals using -----
 a) FAX **b) modem**
 c) cable d) coaxial cable [M-07,S-09]
- In the AM super heterodyne receiver system the value of the intermediate frequency is equal to ---- [J-09]
 a) 445 kHz **b) 455 kHz** c) 485 kHz d) 465 kHz
- In FM receivers, the intermediate frequency is ----[O-10,12]
 a) 455 kHz b) 455 MHz c) 10.7 kHz **d) 10.7 MHz**
- In AM super heterodyne receiver, the local oscillator frequency is 1.245 MHz. The tuned station frequency is ----- [J-06]
 a) 455 kHz **b) 790 kHz** c) 69 kHz d) 990 kHz

UNIT – 10. Communication System – 3 mark Questions

- What are the different types of radio wave propagation? [O-11]
- What is meant by skip distance? [dmp,J-07,M-08,J-09,O-10,M-11,J-12]
- Define amplitude modulation [M-12]
- Define modulation factor in AM. [M-06,J-11,13]
- What is the necessity of modulation? [S-07]
- Mention the advantages of frequency modulation. [M-09]
- Define modulation factor. [J-08,S-09,M-10]
- What is interlaced scanning? [S-12]
- Write any three applications of RADAR. [J-06]
- What is fax? Mention its use. [O-06]
- What are the advantages of digital communications? [M-07,13,J-10]
- Mention the three advantages of Fibre optic communication system. [S-08]

UNIT – 10. Communication System – 5 mark Questions

- Explain the space wave propagation of radio waves. [O-06]
- Draw the functional block diagram of AM radio transmitter. [DMP,O-07,J-10]
- Explain with the help of block diagram, the function of FM radio transmitter. [O-08,09,10,J-11,S-12]
- With the help of a functional block diagram, explain the operation of a superheterodyne FM receiver. [M-09]
- What is an optical fibre? Mention the advantages of optical communication system. [M-08,O-11]
- Write short notes on fibre optical communication and mention its advantages. [J-07,O-11]
- State the principle of Radar. What are the applications of Radar? [M-07,10,12,13]
- What are the advantages and disadvantages of digital communication? [M-06,J-06,08,09,12]
- What are the merits of satellite communication? [J-13]

UNIT – 10. Communication System – 5 mark PROBLEMS

1. A 10 MHz sinusoidal carrier wave of amplitude 10mV is modulated by 5 kHz sinusoidal audio signal wave of amplitude 6 mV. Find the frequency components of the modulated wave and their amplitudes [M-11]

UNIT – 10. Communication System – 10 mark Questions

1. Make an analysis of AM wave. Plot the frequency spectrum. [J-06,O-06,M-08,M-09, J&O-10,J-12,M-13]
2. With the help of a functional block diagram, explain the operation of a superheterodyne AM receiver. [J-07,M-12]
3. With the help functional of block diagram, explain function of monochrome TV receiver. [dmp,M-06,07,10,J-08,11,13, S-08,-09]
4. Explain the construction and working of a vidicon camera tube with neat diagram. [J-09]
5. With the help of block diagram, explain the function of a RADAR system. [S-07]
6. Explain the principle and working of RADAR with neat block diagram. [O-11]
7. Explain transmission and reception of Radar with block diagram. [S-12]