22ELU519

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Fifth Semester)

Branch – ELECTRONICS

ELECTRONIC COMMUNICATION -II

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1 What is defined as the width to height ratio of a picture frame?
(i) Aspect ratio (ii) Flicker
(iii) Scanning (iv) Skimming

2 The cut off frequency for a waveguide to operate is
(i) 3 GHz (ii) 6 MHz
(iii) 3 MHz (iv) 6 GHz

3 During splicing which of the following sites is not recognized by the splicosome?
(i) G-rich site (ii) Acceptor
(iii) Branch point (iv) Donor

4 Which of the following can be affected by atmospheric path disturbances?
(i) Modern GPS surveying (ii) Conventional GPS
(iii) Absolute positioning (iv) Resection method

5 WiMAX provides _____
(i) half duplex communication (ii) no communication
(iii) Full duplex communication (iv) Simplex communication

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a Analyze how the transition from analog to digital television broadcasting has impacted signal quality and viewing experience.

OR

b Bring out the advantages of 3D Television

7 a Evaluate the importance of impedance matching in the design of microwave antennas.

OR

b Analyze how the efficiency of a Traveling Wave Tube (TWT) can be affected by the choice of materials used in its construction.

8 a Analyze how the use of optical fibers in communication systems improves data transmission over long distances.

OR

b Examine the role of wavelength division multiplexing (WDM) in optical communication systems.

Cont...

9 a Analyze the role of uplink and downlink frequencies in satellite communication systems.

OR

b Evaluate how the choice of satellite orbit (geostationary vs. low Earth orbit) affects the design of satellite communication systems.

10 a Explain how a LAN is configured to ensure data security in a small office setup

OR

b Design a system using RFID for inventory management in a warehouse. Briefly outline its working.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a Compare HDTV with standard definition TV (SDTV)

OR

b Differentiate LED TVs from LCD TVs

12 a Compare a klystron with a traveling-wave tube (TWT).

OR

b Classify the different types of klystrons

13 a Differentiate between unidirectional and bidirectional WDM systems

OR

b Compare WDM with TDM

14 a Classify the different types of GPS receivers

OR

b Compare Ku-band and Ka-band VSAT systems

15 a Classify the key components of an OFDM system and explain the role of each component in ensuring efficient data transmission.

OR

b Differentiate between narrowband communication and ultra-wideband communication in terms of spectrum usage, bandwidth, and signal interference.

Z-Z-Z END