

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2019  
(First Semester)

Branch - APPLIED ELECTRONICS

COMMUNICATION SYSTEMS

Time : Three Hours

Maximum : 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 Which among the following is analog continuous modulation technique?  
(i) PAM (ii) PCM  
(iii) AM (iv) PM
- 2 When noise is passed through a narrow band filter, the output of filter should be?  
(i) triangular (ii) rectangular  
(iii) circular (iv) sinusoidal
- 3 Find out the QAM combination.  
(i) ASK&FSK (ii) ASK&PSK  
(iii) PSK&FSK (iv) None of the above
- 4 Which needs precise time coordination?  
(i) CDMA (ii) TDMA  
(iii) FDMA (iv) None of the above
- 5 Find the major disadvantage of klystron amplifier.  
(i) low power gain (ii) low bandwidth  
(iii) high bandwidth (iv) design complexity
- 6 When PIN diode is used as a switch, the expression for insertion loss of the switch is given by  
(i)  $10 \log (P_0/PL)$  (ii)  $10 \log (PL/P_0)$   
(iii)  $10 \log (PL.P_0)$  (iv) None of the above
- 7 Indicate how many types of misalignments occur when joining compatible fiber?  
(i) one (ii) two  
(iii) five (iv) three
- 8 Two joined step index fibers are perfectly aligned. What is the coupling loss of numerical aperture are  $NA_R = 0.26$  for emitting fiber?  
(i) -0.828 dB (ii) -0.010 dB  
(iii) -0.32 dB (iv) .032 dB
- 9 What is the full form of IEEE?  
(i) International Electrical and Electronics Engineers  
(ii) Integrated Engineers of Electrical and Electronics  
(iii) Institute of Electrical and Electronics Engineers  
(iv) International Institute of Electronic Engineers
- 10 Which frequency is used for bluetooth transceiver devices?  
(i) 2.4 Ghz (ii) 2.5 Ghz

**SECTION - B (35 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks ( 5 x 7 = 35)

- 11 a Explain about VSB modulating signals.  
OR  
b Sketch the neat waveforms and explain with phase modulation.
- 12 a Discuss about pulse position modulation (PPM).  
OR  
b Illustrate in details about phase shift keying (PSK).
- 13 a Determine in details about traveling wave tubes.  
OR  
b Sketch a PIN diode construction and describe it briefly.
- 14 a Explain about photo detectors in optical communications.  
OR  
b Justify the fiber optic cable connectors with neat diagram.
- 15 a Discuss in details about Zig Bee network topologies.  
OR  
b Elucidate the network connection establishment in Bluetooth technology

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Compare the following : (i) AM generation (ii) FM generation.
- 17 Determine the principles of frequency division multiple access (FDMA) with suitable diagram.
- 18 Elucidate the working principle of multicavity klystron with neat diagram.
- 19 Classify the fiber optic communication cables and explain briefly.
- 20 Differentiate the wi-fi technology with other wireless personal area networks.

Z-Z-Z

END