BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – B.Tech.(CSE)-2018/B.Tech.(CSE)-2019
Course Name – Satellite Communication
Course Code - OEC-802B
(Semester VIII)

Full Marks : 70   **Time : 3:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)   1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Choose, Which of the following statement is true regarding frequency division multiplexing?

   a) It assigns a single user with a single channel   b) It minimizes crosstalk by using guard bands
   c) No user can share other users frequency   d) Aii of these
   band at a time

(ii) Select, Which of the following are the examples of FDMA?

   a) AMPS   b) NMT
   c) Radiocom   d) All of these

(iii) Choose, which of the following are the main components in satellite communication?

   a) Uplink   b) Downlink
   c) Transponder   d) All of these

(iv) Choose, which of the following is the function of a transponder?

   a) It boots incoming signal   b) It reduces the frequency of a signal
   c) It adds noise   d) All of these

(v) Report, which of the following is a true statement according to two way satellite communication?

   a) It takes place between one or multiple   b) Information is exchanged between two
   earth stations via satellite   earth stations
   c) Both a and b   d) None of the these

(vi) Choose, which of the following are the examples of one way satellite communication?

   a) Radio   b) Tracks space operation service
   c) Internet services   d) None of the these

(vii) Choose, which of the following are the applications of satellite communications?

   a) TV   b) Radio
   c) Military   d) All of these

(viii) Examine, which of the following is the factor the carrier to noise ratio of a satellite depends on?

a) Bandwidth
b) Path loss that provides free loss
c) An isotropic antenna radiates power effectively
d) All of these

(ix) Examine, which of the following are the units of ground track velocity?

a) Bits/seconds
b) Meters/second
c) Centimeters
d) Bits

(x) MEO define as _____.

a) Medium earth orbit
b) Media earth orbit
c) Mass earth orbit
d) None of the these

(xi) Select, which of the following orbit has equal lower altitude and higher velocity?

a) Geosynchronous orbit
b) Asynchronous orbit
c) Geostationary orbit
d) None of the these

(xii) Choose, does LEO orbit requires routing?

a) Yes
b) No
c) Maybe
d) Depends

(xiii) Select, Which of the following are the algorithms used in satellite communication?

a) MHA – minimum hops algorithm
b) MCA – Minimum cost Algorithm
c) Dijkstra shortest algorithm
d) All of these

(xiv) PIM state for _____.

a) Pulse interval modulation
b) Pulse internet modulation
c) Pulse internal mode
d) None of the these

(xv) State, satellite communication has _____ a number of components.

a) 1
b) 2
c) 3
d) 4

Group-B
(Short Answer Type Questions)   3 x 5=15

2. Explain MEO of satellite orbits.   (3)
3. Write down the Advantages of placing a Satellite in a Geostationary orbit?   (3)
4. Differentiate between of TDMA over FDMA.   (3)
5. A satellite is moving in an elliptical orbit with major axis is equal to 42000 km. If the perigee (3) distance is 8000 km, Calculate the apogee and the eccentricity.
6. Define i) Kepler's second law of motion ii) Apogee iii) Argument of perigee.   (3)

OR

Describe orbital effects on satellite performance.   (3)

Group-C
(Long Answer Type Questions)   5 x 8=40

7. Classify satellite Remote sensing system on basis of radiation and spectral region used for (5) data acquisition, explain any one method.
8. Describe Indian Remote Sensing Satellites System.   (5)
9. Define satellite. Give examples of natural and artificial satellites. Name the first artificial (5) satellite, stating its year of launching and the concerned country.
10. Explain the actions of Lidar.   (5)
11. Explain what is guard time? Mention its role in TDMA efficiency?   (5)
12. Express the effects of propagation in atmosphere?   (5)
13. Describe the satellite tracking system and explain any four tracking technique with neat   (5) block diagram
14. What is Remote sensing satellite system? Write down its applications.   (5)

OR

Justify, what are some ways that remote sensing could help us better understand climate   (5)
change?

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