SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.Tech - IT
Title of the paper: Telecommunication Systems
Semester: V Max. Marks: 80
Sub.Code: 412505/512505/612503 Time: 3 Hours
Date: 11-11-2008 Session: FN

PART – A (10 x 2 = 20)

Answer All the Questions

1. Is it possible to construct a Frequency independent antenna? Justify.
2. List the different types of fading caused in mobile communication.
3. Write the main advantage of using optical frequencies as the carrier.
4. Draw a single mode optical fiber and mark the layers. Also give the correlation between the refractive index of core and cladding.
5. In modern communication, why and what types of multiplexing are employed?
6. In satellite communication, what is called as uplink and downlink?
7. When a subscriber dials a number, what audio tones are used to indicate different conditions?
8. Where is facsimile system mainly used?
9. What are the functions of a base station in AMPS system?
10. What are the services that are integrated in IMTS?

PART – B (5 x 12 = 60)

Answer All the Questions

11. With a simple sketch of a Radar, show how it is used as a distance measuring equipment in aircrafts.

(or)

12. When the mobile antenna height is very close to the ground level, discuss the environment under which the mobile communication is established.

13. With a neat block diagram of an optical communication system, outline how the system functions. Also explain how it is capable of accommodating the increase in the number of subscribers.

(or)

14. Give a brief description of the following with reference to optical fibers
    (a) Cladding
    (b) Zig-Zag propagation
    (c) Multimode transmission
    (d) Dispersion.

15. Explain the ground segment of a satellite communication system.

(or)

16. Explain the functions of a satellite transponder for a geostationary satellite with the help of block diagram.

17. (a) Enlist the salient features of cellular telephone system.
    (b) Explain the primary and basic rate interface of ISDN.

(or)

18. (a) Draw the block diagram of modern facsimile machine and explain.
    (b) Draw and explain a digital paging receiver.

19. Compare the features of IMTS and AMPS.

(or)

20. What are the objectives of digital cellular system? Discuss the functional architecture of GSM and its principal interfaces.