STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.
(For candidates admitted during the academic year 2004-05 & thereafter)

SUBJECT CODE : **PH/MO/CS64**

B.Sc. DEGREE EXAMINATION APRIL 2009
BRANCH III - PHYSICS
SIXTH SEMESTER

COURSE : **MAJOR – OPTIONAL**
PAPER : **COMMUNICATIONS SYSTEMS**
TIME : **3 HOURS** MAX. MARKS : 100

SECTION – A

ANSWER ALL QUESTIONS: (10 x 3 = 30)

1. What is AM? What is modulation factor?

2. What is the principle of radar?

3. What are the advantages of satellite communications?

4. What is the principle of colour television?

5. Mention any three merits of plumbicon.

6. What are sky waves? What purpose they are used?

7. What is interlaced scanning?

8. Mention some of the importance of optical fibres.

9. What is acceptance angle and acceptance cone of a fibre?

10. What is LAN?

SECTION – B

ANSWER ANY SIX QUESTIONS: (5 x 6 = 30)

11. What is FM? Analyse the frequency modulated wave.

12. Compare AM with FM. Mention the advantages of AM and FM.

13. Write a note on composite video signal.

14. With a neat diagram, explain the function of plumbicon.

15. Explain how ground, sky and space wave are used for propagation.

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16. Explain the function of klystron oscillator.

17. Explain, how light is propagated through optical fibre.

18. Explain with diagram meridional and skew rays.

SECTION – C

ANSWER ANY TWO QUESTIONS: (2 x 20 = 40)

19. a) Draw the block diagram of radar system and explain its function.

    b) Derive the radar range equation.

    c) Mention some of the uses of radar.

20. a) With neat diagram explain the construction and working of Image orthicon.

    b) With the block diagram. Explain the function of TV transmitter and receiver.

    c) Write a note on mixing of colours.

21. a) Explain Tropospheric scatter propagation.

    b) Explain the construction and working of magnetron oscillator.

    c) Write a note on velocity modulation.

22. a) How optical fibres are classified? Discuss each of it.

    b) Discuss fibre loses.

    c) Mention some of the important applications of integrated optic fibre technology.

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