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 2008
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 phase modulation?

2.   State the difference between PWM and PCM.

3.   Mention the use of Doppler effect in Radar system.

4.   What is interlaced scanning?

5.   What are sychronising, blanking and equalizing pulses?

6.   What will be the altitude of a communication satellite above the earth's surface?

7.   What is the velocity of radiowaves?

8.   Define ground waves, sky waves and space waves.

9.   What is a reflex klyston?

10.   Define acceptance angle and acceptance cone of an optical fibre.

SECTION – B

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

11.   Explain how FM waves can be mathematically represented.

12.   Derive the Radar range equation.

13.   With a block diagram, explain TV transmission and reception.

14.   Explain the mixing of colours in a television camera.

15.   With a diagram, explain tropospheric scatter propagation.

16.   Explain the principle of working of a magnetron oscillator.

17.   Explain the difference between stepped index and graded index fibres.

18.   Write a short note on fibre losses.

SECTION – C

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

19.   Define modulation index of Amplitude modulation and give the mathematical analysis of amplitude modulated waves.

20.   With a diagram, explain the working of an Image Orthicon. Mention its limitations.

21.   Explain the working of a klystron oscillator with a neat diagram.

22.   Write a note on:
       a) Optical communication
       b) Applications of optical fibres
       c) LAN.

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