(FOR THE CANDIDATES ADMITTED   SUBJECT CODE 22 PPS 2E3

DURING THE ACADEMIC YEAR 2022-23 ONLY)   REG.NO. ☐☐☐☐☐☐

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI
END-OF-SEMESTER EXAMINATIONS : MAY – 2023

M.Sc.- PHYSICS   **MAXIMUM MARKS: 50**

II SEMESTER   **TIME : 3 HOURS**

CORE ELECTIVE II

ELECTRONIC COMMUNICATIONS AND CYBER SECURITY

SECTION – A (10 X 1= 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.   (K1)

CHOOSE THE BEST ANSWER.

1.   Modulation is the process in which the _____level of intelligence is altered.

      (a)   amplitude   (b)   frequency   (c)   phase   (d)   wavelength

2.   In Sampling theorem, a signal can be reproduced if it is sampled at the frequency F ,
      where the frequency is ---------the maximum frequency in the signal.

      (a)   thrice   (b)   twice   (c)   equal to   (d)is not equal to

3.   The electron beam is _____modulated in Klystron.

      (a) Amplitude   (b)   frequency   (c)   velocity   (d)   phase

4.   Botnet is short for _____network.

.   (a)   legal   (b)   robot   (c)   ordinary   (d)   multi

5.   _____theft is the crime of obtaining the personal or financial information of another
      person to use their identity to commit fraud..

      (a)   Information   (b)   Cyber   (c)   Identity   (d)   network

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES.   (K2)

6.   Write the expression for the Modulation Index in Frequency Modulation.

7.   What is Multiplexing?

8.   Give the use of Directional Antennas.

9.   What is the other name for Heap Overflow?

10.   Define: Sandboxing.

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SECTION – B   (5 X 3 = 15 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.   (K3)

11.   (a)   With a block diagram, explain the Super-heterodyne AM receiver..

(OR)

(b)   Write a note on signal to noise ratio and noise figure..

12.   (a)   Explain the Pulse Code Modulation..

(OR)

(b)   Discuss the importance of Quantization Error.

13.   (a)   Give the construction details of Travelling Wave Tube.

(OR)

(b)   Derive the Radar Range Equation..

14.   (a)   What are the different types of overflows? Discuss any two.

(OR)

(b)   Write a note on Cryptography.

15.   (a)   Discuss the importance of Web Security..

(OR)

(b)   Write a note on any two Legal and Ethical issues.

SECTION – C   (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K4/K5)

16.   (a)   Discuss (i) Generation and (ii) Spectrum and Bandwidth in Frequency Modulation.

(OR)

(b)   Write a note on (i) Thermal and Shot Noise and (ii) Model of Communication System

17.   (a)   Discuss the (i) rate and Measurement and (ii)Channel Capacity in Information Theory.

(OR)

(b)   Explain the (i) PAM and (ii) Sampling Theorem.

18.   (a)   Explain construction and working of Reflex Klystron.

(OR)

(b)   With a block diagram, write about working of Colour TV Receiver.

19.   (a)   Discuss the (i) Confidentiality and (ii) Integrity of Cyber Security

(OR)

(b)   Give a note on (i) Viruses and (ii) Trojans in Threats.

20.   (a)   Describe the (i) Network Intrusion and (ii) Fire Walls in Network Security.

(OR)

(b)   Write a note on (i) Control Flow Integrity

(ii) Penetration Testing in Software security

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