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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2024-25 ONLY)

SUBJECT CODE 24 PPS 2E3

REG.NO.

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY– 2025

M.Sc. – PHYSICS **MAXIMUM MARKS: 75**

II SEMESTER **TIME : 3 HOURS**

ELECTRONIC COMMUNICATIONS AND CYBER SECRIUY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. In Modulation process,-------Characteristics of a wave is not been altered.

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

2. The difference between the analog signal levels and quantized signal levels is called as----.

   (a) channel capacity (b) noise (c) quantization error (d) bandwidth

3. In Klystron, the resonator nearest to the cathode is known as----------.

   (a) buncher (b) catcher (c) reflector (d) oscillator

4. A--------is a type of Malware that takes over a computer by pretending to be a legitimate program.

   (a) virus (b) root kit (c) botnet (d) worm

5. --------is a cyber-security technique that isolates potentially harmful software in a controlled environment.

   (a) Flow integrity (b) Penetration testing (c) Sandboxing (d) network

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

6. Define: Bandwidth.

7. State Sampling Theorem.

8. List out the elements of a Radar system.

9. What is Heap Overflow?

10. Define: Control Flow Integrity.

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SECTION – B (5 X 5 = 25 MARKS)

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

11. (a) With a block diagram, explain about the Vestigial Side band (VSB) Modulation.

(OR)

b) Write a note on White, Thermal and Shot Noise.

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

(OR)

(b) What is PAM ? Discuss about PAM with needed diagrams.

13. (a) Give the construction of Reflex Klystron with a block diagram.

(OR)

(b) Derive Radar Range Equation..

14. (a) Discuss about Confidentiality and Integrity in Cyber Security.

(OR)

(b) Write a note on Cryptography.

15. (a) Discuss briefly about the Fire walls and Network Intrusion in Network Security.

(OR)

(b) Write a note on (i) Vulnerability Auditing and (ii) Penetration Testing in Software Security.

SECTION – B (5 X 8 = 40 MARKS)

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

16. (a) Explain the Double Sideband Suppressed Carrier Modulation(DSB-SC) method for Amplitude Modulation.

(OR)

(b) With needed diagrams, explain the Modulation index, Spectrum and bandwidth of Frequency Modulation.

17. (a) Discuss about the (i) Shannon's Theorem and (ii) Delta Modulation.

(OR)

(b) Discuss about the Theory of FSK with rate and measurement, Channel capacity, noisy and noiseless channel.

18. (a) Explain construction and working of Magnetron.

(OR)

(b) With a block diagram, write a note on Colour TV Transmitter.

19. (a) Discuss about the (i) Viruses(ii) Trojans and (iii) Root kits in Threats.

(OR)

(b) Give a note on (i) Buffer (ii) Integer and (iii) Format Overflows in Memory Exploits.

20. (a) Describe in detail about the Web Security.

(OR)

(b) Write a note on (i) Identity Theft (ii) Trade Secret and (iii) Intellectual Property Rights in Legal and Ethical Issues.