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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2021-22 ONLY) **21PPS2E3**

REG.NO. :

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

END-OF-SEMESTER EXAMINATIONS: JULY 2022

M.Sc. PHYSICS **MAXIMUM MARKS: 70**

SEMESTER - II **TIME: 3 HOURS**

CORE ELECTIVE-II: ELECTRONIC COMMUNICATIONS AND CYBER SECURITY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.
MULTIPLE CHOICE QUESTIONS. **(K1)**

1. In which of the following types of amplitude modulation are only the sidebands transmitted and the carrier is suppressed?
   (a) DSB (b) SSB (c) VSB (d) All the above
2. In which modulation technique does the phase of the carrier signal is changed by varying the sine and cosine inputs at a particular time.
   (a) FM (b) AM (c) PCM (d) PSK
3. What is the maximum color TV bandwidth?
   (a) 0.5 MHz (b) 1.0 MHz (c) 1.3 MHz (d) 1.6 MHz
4. Which one of the following threat is initiated by spam mail, social media or a game application?
   (a) Computer Virus (b) Trojan (c) Root kits (d) Botnets
5. To protect the computer system against the hacker and different kinds of viruses, one must always keep _____ on in the computer system.
   (a) Antivirus (b) Firewall (c) Browsers (d) Script

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

6. Provide an expression for bandwidth of frequency modulation.
7. State sampling theorem of pulse modulation.
8. Write a role of duplexer in radar system.
9. What does mean for “Botnets”?
10. Give any one use of sandboxing in software security.

SECTION – B (5 X 4 = 20 MARKS)

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

11. a) Write short note on signal to noise ratio with diagram.

(OR)

b) Give an account of amplitude modulation with a neat diagram.

12. a) Explain how you will transmit a data from one point to another point using radio frequency transmission.

(OR)

b) Describe Shannon’s theorem of a digital communication system.

(CONTD….2)

13. a) Discuss colour TV transmission with block diagram.

(OR)

b) Briefly discuss the travelling wave tube of microwave system.

14. a) Explain the overview of cyber security.

(OR)

b) Write a short note on cryptography.

15. a) Give the importance of firewalls in network security system.

(OR)

b) Explain the vulnerability auditing in network security system.

SECTION – C (4 X 10 = 40 MARKS)

ANSWER ANY FOUR OUT OF SIX QUESTIONS
(16thQUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS (FROM Qn. No : 17 to 21) (K4 (Or) K5)

16. Obtain an expression for radar equation and explain the radar performance factors.

17. Explain in detail (i) Superheterodyne AM receiver (ii) Superheterodyne FM receiver.

18. Distinguish between pulse amplitude modulation and pulse time modulation.

19. State and explain the principle, construction and working of multicavity klystron.

20. Write an essay on memory exploits in cyber security.

21. Highlight the importance of legal and ethical issues in network security system.

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