

Second Year Higher Secondary Examination – 2012

Model Question Paper, Part – III

Time : 2 Hrs

Max Score : 60

ELECTRONICS

Cool Off Time : 15 min

- 1.a) The ionosphere plays a major role in long distance communication. Comment on it (3)
- b) Mention the significance of critical frequency and MUF. (2)
- 2.a) Calculate the length of antenna required for effective transmission of a 4KHz OS signal. (2)
- b) Modulation is an inevitable process in communication. Explain. (3)
3. A carrier signal of $10 \sin(2\pi \times 500 \times 10^3 t)$ is AM modulated with a message signal of $5 \sin(2\pi \times 2 \times 10^3 t)$. Draw the complete spectrum of the AM signal. (5)
- 4.a) Frequency range of FM is ----- and AM is ----- (1)
- b) Compare AM and FM. (3)
- c) The value of radio IF is ----- (1)
- 5.a) Draw the block diagram of a monochrome TV receiver? (2)
- b) The interlaced scanning is used to reduce flicker. Explain? (3)
- 6.a) Design and draw a Yagi-Uda antenna for the reception of 300 MHz signal. (4)
- b) Give the values of characteristic impedances of co-axial cable and twin-wire cable (1)
7. Give the neat block diagram and explanation of a manual telephone switching system. (2)
8. In satellite communication, 2 different frequencies are used for uplink and downlink. Give reasons. (2)
9. Give one example for each 8 bit, 16 bit and 32 bit microprocessor? (3)
10. Classify the following into input, output and memory devices. (3)
- Keyboard, RAM, monitor, cache, hard disk, printer, scanner.
- 11.a) Explain the merits and demerits of E-Commerce? (2)
- b) Modem is used to connect your computer to internet. Give reason. (2)

12. Which among the following is the best quality printer? Explain its working? (4)

1. Dot matrix printer
2. Inkjet printer
3. Laser printers

13. Suppose you wanted to store your speech for later use. What all electronic components would you require? Explain the functions of each? (4)

14. You might have seen different scanning equipments for diagnosis in a hospital. Which one would you prefer as it is least harmful to your body. Explain? (3)

15. A 5 V dc regulated power supply is required for an electronic device. Draw the complete Circuit Diagram and explain it? (5)

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