C20-EC–**306**

7244

BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023

DECE - THIRD SEMESTER EXAMINATION

ELECTRONIC MEASUREMENTS AND CONSUMER GADGETS

Time : 3 Hours]　　　　　　　　　　　　　　　　　　[*Total Marks* : 80

PART—A　　　　　　　　　　　　　　3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List any three advantages of digital instruments over analog instruments.

2. Define accuracy and resolution of a meter.

3. Explain the function of any three controls on front panel of CRO.

4. Define deflection sensitivity of CRO.

5. List any three applications of RF signal generator.

6. State the working principle of logic probe.

7. List any three specifications of loudspeakers.

8. Define the terms Hi-Fi and Stereo related to audio systems.

9. List any three features of home theatre sound system.

10. State the need for satellite for TV broadcasting over wide area.

PART—B

8×5=40

Instructions : (1) Answer **all** questions.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Explain the working of FET input voltmeter with a circuit diagram.

(OR)

(b) Explain the working of ramp type digital voltmeter with a block diagram.

12. *(a)* Explain the working of function generator with a block diagram.

(OR)

(b) Explain the working of logic analyzer with a block diagram.

13. *(a)* Explain the construction and working of crystal microphone.

(OR)

(b) Explain the constructional features and principle of operation of PMMC loudspeaker.

14. *(a)* Explain the working principle of digital camera with a functional block diagram.

(OR)

(b) Explain additive and subtractive mixing of colours.

15. *(a)* Draw the block diagram of digital TV reception and explain.

(OR)

(b) Explain resistive and capacitive touch screen technology.

PART—C

10×1=10

Instructions : (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Explain how to measure phase of a signal using Lissajous figures and also draw Lissajous figures for the following phase differences : 6+4=10

(a) 0°

(b) 45°

(c) 90°

(d) 180°

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