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C20-EC-306

7244

BOARD DIPLOMA EXAMINATION, (C-20)

FEBRUARY/MARCH — 2022

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. Define accuracy and resolution of a meter.
2. State the basic principle of D'Arsonval movement.
3. What are the conditions for stationary waveforms?
4. Draw the block diagram of general purpose oscilloscopes.
5. State the working principle of logic probe.
6. List any three applications of RF signal generator.
7. Define the terms Hi-Fi and stereo related to audio systems.
8. List any three specifications of microphones.
9. State the principle of optical recording.
10. State the need for satellite for TV broad-casting over wide area.

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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) Describe construction and principle of working of shunt type ohm meter.

(OR)

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

12. (a) Explain with block diagram the working of RF signal generator.

(OR)

- (b) Explain the basic working principle of spectrum analyser.

13. (a) Describe the principle construction and working of crystal head-phone.

(OR)

- (b) Explain the concept of noise reduction using DOLBY system.

14. (a) Explain with block diagram the working of digital LCD TV receiver.

(OR)

- (b) Explain with functional diagram the working principle of digital camera.

15. (a) Explain resistive and capacitive touch screen technology.

(OR)

- (b) Explain with suitable diagram the digital TV reception.

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PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 16.** Analyse the formation of circle/ellipse, when unknown (fy) and known (fx) frequencies are same. Also draw Lissajous figures for (a) $fy = 2fx$, (b) $2fy = 3fx$ and (c) $2fy = fx$.

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