

Code No. : 20045 E Sub. Code : SSPH 4 A /
ASPH 41

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Fourth Semester

Physics

Skill Based Subject — MAINTENANCE OF
ELECTRONICS APPLIANCES

(For those who joined in July 2017–2020)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- How is a 3.9 k Ω resistor color-coded?
 - red, white, red, gold
 - red, green, orange, silver
 - orange, white red, gold
 - orange, green, orange, silver
- The selectivity of a radio receiver is ————
 - its ability to reject adjacent unwanted signals
 - its ability to amplify weak signals
 - the frequency at which is gives maximum amplification to signal
 - its ability to suppress noise
- Mobile communication network is also called as ———— network.
 - Cellular network
 - Mobile network
 - 2G network
 - Both (a) and (b)
- Amount of light that falls in to the sensor of the camera
 - exposure
 - white balance
 - depth of field
 - three point lighting
- In digital camera, the lens shutter speed is used to
 - control exposure timing
 - control light
 - control resolution
 - control all

- As a capacitor is being charged, the voltage across its terminals will
 - increase
 - decrease
 - remain the same
 - oppose the source
- Basic building blocks of digital multimeter are
 - oscillator, amplifier
 - diode, op amp
 - rectifier, schmitt trigger
 - A/D, attenuator, counter
- A CRO is used to measure ————
 - Voltage
 - Frequency
 - Phase
 - All of above
- Which transducer is known as 'self-generating transducer'?
 - Active transducer
 - Passive transducer
 - Secondary transducer
 - Analog transducer
- Which of the following can be measured using Piezo-electric transducer?
 - Velocity
 - Displacement
 - Force
 - Sound

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

- (a) Explain, with two examples, colour coding of resistors.
Or
(b) Describe, giving neat sketch, the groove board arrangements.
- (a) Write short notes on 'analog' and 'digital' multimeters.
Or
(b) Describe digital storage oscilloscope, giving its block diagram.
- (a) Explain any five basic requirements of a transducer.
Or
(b) List out the applications of capacitive transducer.
- (a) Define radio transmitter? Explain its function with neat block diagram.
Or
(b) State the requirements of mobile communication system? Explain the structure of the mobile communication system.

15. (a) Describe the principle of working of a digital camera lens filter.

Or

- (b) Explain about the procedure followed by transfer of images and data from digital camera to computer.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss about the various types of resistors and their characteristics.

Or

- (b) Define soldering. Explain in detail, soldering techniques and how you would achieve good soldering.

17. (a) Describe, with neat sketch, the function and working principle of Cathode Ray Oscilloscope.

Or

- (b) Explain, with circuit diagram, the working of an audio frequency oscillator. How is the frequency of the output of the oscillator controlled?

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18. (a) Describe the action of a piezoelectric transducer and its applications in the measurement of mechanical force.

Or

- (b) Describe construction, principle and working of a photoresistors. Give its applications.

19. (a) Describe, giving neat sketch, the construction and action of various parts of the Yagi antenna. Calculate the length of elements of folded dipole in the yagi antenna.

Or

- (b) Define modem. Describe with neat block diagram, the function of modem, modem modulation method and modem interfacing.

20. (a) State the various parts of camera. Explain the function of parts of camera with neat sketch.

Or

- (b) Describe, with neat diagram, the functioning and advantages of focal plane shutter in digital camera.

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