

**G 18000996**



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**Reg. No.....**

**Name.....**

**M.Sc. DEGREE (C.S.S.) EXAMINATION, MAY 2018**

**Fourth Semester**

Faculty of Science

Branch II—Physics—A—Pure Physics Elective Bunch-A—Electronics

**PH 4E A3—INSTRUMENTATION AND COMMUNICATION ELECTRONICS**

Time : Three Hours

Maximum Weight : 30

**Part A**

*Answer any **six** questions.*

*Weight 1 each.*

1. Give the principle of a pressure transducer.
2. Explain XY recorders.
3. State the bandwidth requirements for SSB techniques.
4. What do you mean by characteristic impedance ?
5. Differentiate between GSM and CDMA.
6. What is pulse communication ?
7. What is an ohm meter ?
8. Give the basic principle of monochrome reception ?
9. Differentiate between tachometer and pH meter.
10. State the importance of satellite communication.

(6 × 1 = 6)

**Part B**

*Write any **four** questions.*

*Weight 2 each.*

11. Write down the principle and working of an ionization transducer.
12. Write different modes of operations for standard differential voltmeter.
13. Find the value of resistance on the 100V range of an ac voltmeter, that uses a 500  $\mu$ A meter movement with an internal resistance of 250  $\Omega$  ?

**Turn over**





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14. Explain voltage to frequency conversion.
15. Define the term “Gauge factor” for strain gauge. Explain the Piezo electric and magnetostrictive transducers.
16. Give the details of Quarters and half wavelength lines.

(4 × 2 = 8)

**Part C**

*Answer all questions.*

*Weight 4 each.*

17. (a) Enunciate the classification of transducers in detail.

*Or*

- (b) Explain in detail the working of digital voltmeter, digital multimeter and digital phase meter.

18. (a) Detail the working of chopper type DC amplifier, voltmeter and a differential voltmeter.

*Or*

- (b) Detail the working of storage oscilloscope.

19. (a) Explain the losses transmission lines.

*Or*

- (b) Detail the microwave generators functioning.

20. (a) Give the basic idea of frequency division multiplexing.

*Or*

- (b) Explain the importance of data sets and inter connection requirements in digital communication.

(4 × 4 = 16)

