TM144410B **Reg. No…….....**

Name:…….....

M. Sc. DEGREE (C.S.S.) EXAMINATION, MARCH 2017
(Supplementary – 2014 Admission)
SEMESTER IV – PHYSICS
PHY4ICE- INSTRUMENTATION AND COMMUNICATION ELECTRONICS

Time: Three Hours **Maximum Weight: 30**

PART A

I. Answer any six questions. Each question carries a weight of 1

1. Potentiometer is a passive transducer. Comment.
2. Describe the working principle of a thermistor.
3. What is a load cell?
4. Write a short note on tachometer.
5. Explain the function of a sweep generator in CRO.
6. Briefly explain the principle of magnetic recording.
7. What is the need of a balun in a TV receiver?
8. What is standing–wave ratio?
9. Explain the principle of cellular communication.
10. Write a note on GPS.

(6x1=6)

PART B

II. Answer any four questions. Each question carries a weight of 2

11. What are the various electrical phenomena used in the transduction elements of transducers?
12. Explain the principle behind Hall Effect transducer.
13. Explain the working of a transistor voltmeter.
14. Explain the principle of working of a stroboscope.
15. How amplitude modulation is different from frequency modulation?
16. Briefly explain the terms, critical frequency and maximum usable frequency in sky wave propagation.

(4x2=8)

PART C

III. Answer all questions. Each question carries a weight of 4

17. (a). Describe the principle of operation of a linear variable differential transducer with diagram.

Or

(b). Write down the difference between digital counters and timers

18. (a). Explain multiplexing techniques for communication with diagrams.

Or

(b). Write down different pulse modulation techniques with diagrams.

19. (a). Explain the horizontal and vertical deflection circuits of a TV receiver.

Or

(b). Explain SSB modulation using balanced modulator.

20. (a). Draw the block diagram of a CRO and explain the functions of each block.

Or

(b). Explain the working of a chopper type DC amplifier voltmeter.

(4x4=16)