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Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) [2014 SCHEME] DEGREE
EXAMINATION, APRIL 2018

Mechanical Engineering

ME 14 801—MECHATRONICS

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any eight questions.

1. Brief the key elements of a measurement system.
2. Reduce the block diagram shown in Figure. 1 and determine the transfer function.

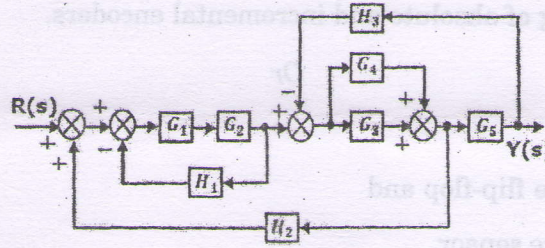


Figure.1 Block diagram

3. With a neat sketch, explain the working of a laser printer.
4. Brief on Data logger systems.
5. With a neat sketch, explain the working of a flapper nozzle.
6. Citing an example, state the working of a P/I converter.
7. With a neat sketch, explain any one type of stepper motor.
8. Brief the working of a cone jet proximity sensor with a neat sketch.
9. Illustrate the elements of a Magnetic recording head.
10. Brief on bistable-flip flops.

(8 × 5 = 40 marks)

Turn over

Part B

Answer all questions.

11. (a) Citing appropriate industrial examples, explain servo mechanism and regulator.

Or

- (b) Explain open loop and closed loop control systems with a suitable example.

12. (a) With a neat sketch, explain the working of a CRO.

Or

- (b) Illustrate the working of liquid crystal display units.

13. (a) Elaborate the working of volume booster with a neat sketch.

Or

- (b) Sketch and explain the significance of proportional plus integral plus derivative pneumatic controls.

14. (a) Explain the working of absolute and incremental encoders.

Or

- (b) Elaborate on :

(i) OR/NOR gate flip-flop and

(ii) Back pressure sensor.

(7.5 + 7.5 = 15 marks)

[4 × 15 = 60 marks]