

Marks

TED (15) - 4241

(REVISION - 2015)

Reg. No.

Signature

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

ANALYTICAL AND DIAGNOSTIC EQUIPMENTS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Define precision.
2. Recall the expression for mean arterial pressure.
3. State Bruce protocol.
4. Define accuracy.
5. State Beer Lamberts Law.

(5×2 = 10)

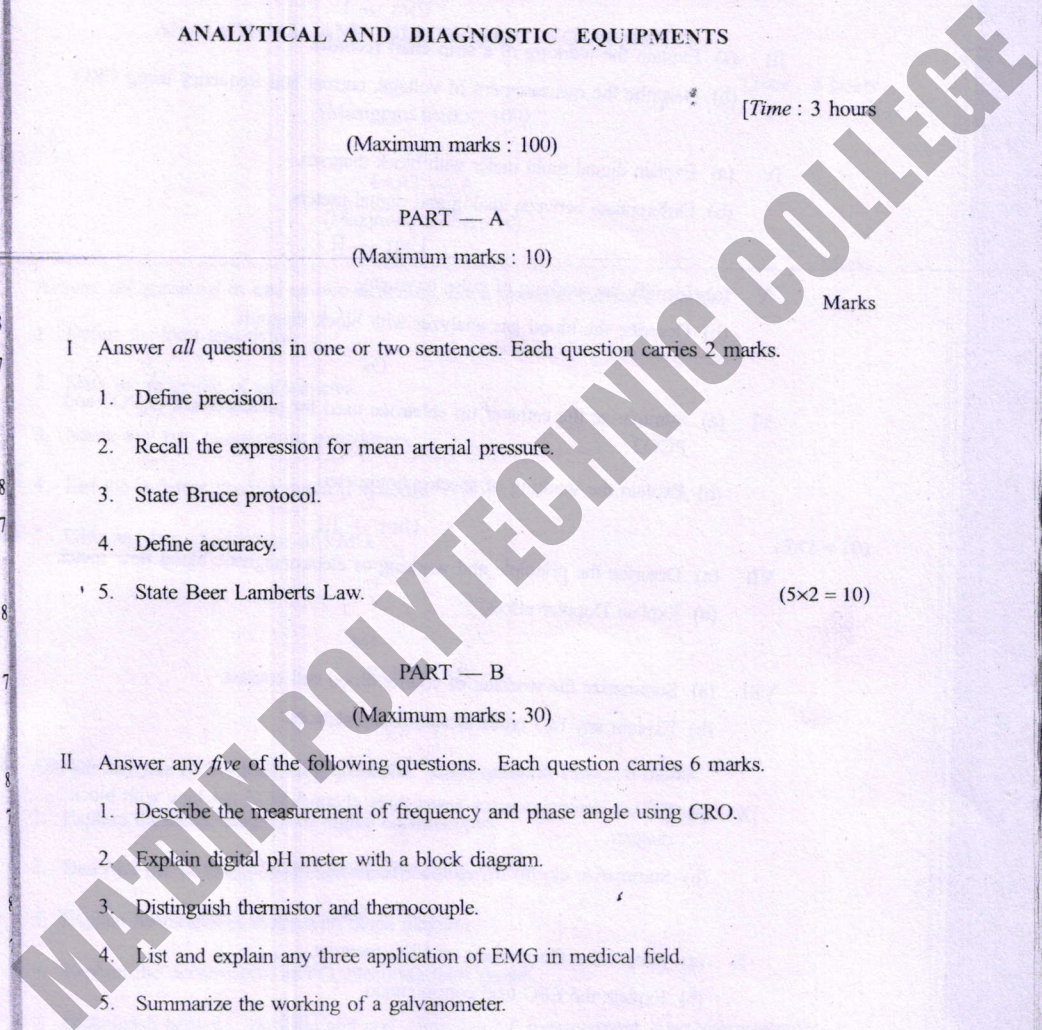
PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Describe the measurement of frequency and phase angle using CRO.
2. Explain digital pH meter with a block diagram.
3. Distinguish thermistor and thermocouple.
4. List and explain any three application of EMG in medical field.
5. Summarize the working of a galvanometer.
6. Explain the principle and construction of electrode used for measurement of PO₂.
7. Summarize NIBP measurement with the principle of sphygmomanometer.

(5×6 = 30)



PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain the working of a strip chart recorder.
(b) Describe the measurement of voltage, current and frequency using CRO.

OR

- IV (a) Explain digital multi meter with block diagram.
(b) Differentiate between analog and digital meters.

UNIT — II

- V (a) Identify the working of pulse oxymetry.
(b) Describe the blood gas analyzer with block diagram.

OR

- VI (a) Summarize the catheter tip electrode used for measurement of PO₂ and PCO₂.
(b) Explain the working of spectrophotometer.

UNIT — III

- VII (a) Describe the principle and working of electromagnetic blood flow meter.
(b) Explain Doppler effect.

OR

- VIII (a) Summarize the working of coulter blood cell counter.
(b) Explain any two types of respiratory sensors.

UNIT — IV

- IX (a) Explain microprocessor based three channel ECG machine with block diagram.
(b) Summarize electro myograph with block diagram.

OR

- X (a) Summarize the working of EEG recorder.
(b) Explain the EEG lead configuration.
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