T.E- V Sem - Biomed.

6/05/2016

# Biomedical Instrumentation - I

(11) TE/V/CBGS/Bm/BMI-1

Q.P. Code : **31140**

(3 Hours) [ Total Marks : 80

N.B. : (1) Question No. 1 is compulsory.
(2) Attempt any three questions from the remaining five.
(3) Figures to the right indicate full marks.
(4) Use legible handwriting.

1. (a) Explain the optical ray diagram of spectrophotometer. 5
(b) Explain impedance plethysmography. 5
(c) Explain pH electrode. 5
(d) Explain the importance of masking in audiometry. 5

2. (a) Draw and explain working of coulter blood cell counter. 10
(b) Explain with a block diagram the working of a heart lung machine. 10

3. (a) Explain dye dilution method for cardiac output measurement. 10
(b) Explain using a spirogram various lung volumes and capacities. 10

4. (a) Explain evoked response audiometry. 10
(b) Explain the various modes of ventilators. 10

5. (a) Explain protein separation technique using electrophoresis. 10
(b) Explain the block diagram of autoanalyser. 10

6. Write short notes on any four: 20
(1) Chromatography.
(2) Beer-Lambert's Law.
(3) Oxygenator.
(4) ELISA.
(5) Diffraction grating.

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