

(Following Paper ID and Roll No. to be filled in your Answer Books)

**PAPER ID :****Roll No.**

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**B.TECH.****Theory Examination (Semester-VIII) 2015-16****ADVANCED BIOMEDICAL INSTRUMENTATION****Time : 3 Hours****Max. Marks : 100****SECTION-A****1. Attempt all of the following:****(10X2=20)**

- Write the types of electromagnetic blood flow meter
- Write the use of coulter counter.
- Write the types of signals produced by SEM.
- Write the types of electron microscope.
- What are the factors which affects stroke volume in heart?
- Define spectrophotometer?
- What is a spirometry?
- What is Korotkoff sounds?
- What are the various ways of measuring blood pressure?
- Why blood gas analyzers are being used?

**SECTION-B****2. Attempt any five of the following:****(5X10=50)**

- What are gas and liquid chromatography? Explain briefly.
- Briefly explain Beer-Lambert 's law in spectrometry?
- Write the principle of phase contrast microscopy.
- Explain principle and application of Ultrasonic blood flow meters.
- What is cardiac output? What are the different ways of measuring cardiac output? Explain any one.
- Classify the various types of endoscopes based upon their construction, application, observation & optical transmission.
- Explain working principle and application of pulmonary function analyzers.
- What do you understand by Pneumotachography? Explain its different types.

**SECTION-C****Attempt any two of the following:****(15X2=30)**

- What is the principle of Colorimetry? Explain it along with its application areas.
- Explain briefly about the working principle of scanning and transmission electron microscope.
- What are the differences between In vivo and In vitro oximetry

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