Bio-Medical Laboratory **Science and Management**
MSc. Part-II Examination, 2007

IMAGE PROCESSING AND MODERN
BIOMEDICAL INSTRUMENTATION

PAPER-XI/Unit-22

Full Marks : 50

Time : **2 hours**

The figures ***in the right-hand margin indicate marks***

Candidates are required to give their ***answers in their*** *own words as far as practicable*

Illustrate the answers *wherever necessary*

UNIT-22

Answer Q. No. 1 and any *four* **from the rest**

1. Answer any *five* **questions :** **2x5**

(a) What is Wenckebach **Phenomenon?**

(b) What do you mean by X-ray safety?

(c) Write the advantages of endoscopy.

(d) What do you mean by Bundle Branch Block?

(e) How do you **minimize** artefacts generated in ECG tracing ?

(f) What is Curie temperature?

(g) Mention the basic principle of flame photometry.

(h) Mention some applications of Sandwich ELISA test?

2. (a) What is the most advance development in the **instrumentation** related to endoscopic surgery ?

(b) 'ei tTi& ifferent components of an endoscope.

(c) Mention the demerits of endoscopy. 3+5+2

3. (a) What do you mean by Piezoelectric effect ?

(b) What is acoustic impedance, and angle of incidence of beam ?

(**c) What are the biological hazards** of USG2+(21+21) +3
2 2

4. (a) Describe Einthoven Triangle with diagram.

(b) What is the clinical importance of ST **segment ?**

(c) Describe LBBB and RBBB. 3+2 +(21 +21)
2 2

S. (a) Mention the properties of different polygraphic **waves.**

(b) What are the applications of Polygraph ?

(c) Write the name of different types of EEG waves with its characteristic features. 4+2+4

6. (a) Explain Lambert-Beer's Law.

(b) What is FID ?

(c) Mention the principle of NMR and CAT scaning. 4+2+(2+2)

7. (a) Describe the mechanism of X-ray generation.

(b) What are the precautions should be taken for a technician and a patient during X-ray photography ?

(c) What is mitral stenosis ?

$4+\frac{(21+21)}{2}+\frac{1}{2}$