

**2008**

**M.Sc.**

**4th Semester Examination**

**BIO-MEDICAL LAB. SCIENCE & MANAGEMENT**

**PAPER—XIV (Unit - 27)**

*Full Marks : 40*

*Time : 2 Hours*

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

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

*Illustrate the answers wherever necessary.*

**(Image Processing and  
Modern Biomedical Instruments)**

**Answer all questions.**

**Module — I**

1. Answer any *five* questions of the following : 5×1
- (a) What is the range of UV-light?
  - (b) What is colour dopler test?
  - (c) What is pixel used in CASA?
  - (d) What is frequency range of sound wave used in sonicator?
  - (e) Enumerate the calculation of for the conversion of rpm to 'g'.
  - (f) What is the role of slit in Spectrofluorometer?

*(Turn Over)*

- (g) What is the range of rpm in ultra centrifugation ?  
(h) Name the instrument associated with RIA.

2. (a) How X-rays are produced ?  
(b) Explain the hazards of X-ray in brief.  
(c) Mention the principle followed in the sonication of a solution containing human cells.  
(d) What precautions you should take during sonication ?

$2\frac{1}{2}+2\frac{1}{2}+2+1$

**Or**

- (a) Write the application of ultra-centrifuse in Biomedical Science.  
(b) Describe the basic principle of Spectrofluorometer for the quantification of biomolecules.  
(c) Mention the limitation of Spectrofluorometer.

2+5+1

3. (a) Write the fundamentals of sperm analysis in CASA.  
(b) Write the advantages of CASA over sperm analyzer.

5+2

**Or**

- (a) What is polygraph ? How it helps in the field of criminology ?  
(b) What is laparoscopy ?

(4+1)+2

**Module — II**

4. Answer any *five* questions of the following : 5×1
- (a) Write the full form of *NREM* and *REM*.
  - (b) Write the names of two important brain monoamines related with hypermania.
  - (c) What is Physiological amenorrhoea ?
  - (d) What is angiography ?
  - (e) Give the names of any *two* neurocardiac diseases.
  - (f) What is the neuro-endocrine axis ?
  - (g) Why sympathetic excitation results hypertension ?
  - (h) What are the waves of Normal EMG ?
5. (a) Write the neural basis of amenorrhoea.
- (b) What are the neural disorders that lead to erectile dysfunction ? 4+4

**Or**

- (a) Write the neural mechanism of epilepsy.
- (b) During neural excitation, what are the changes noted in EMG ? 5+3

6. (a) How brain monoamines are involved for the manifestation of manic symptoms in an individual?
- (b) Write the neural basis of rage phenomenon. 5+2

**Or**

- (a) How adrenal medulla is modulated by neural signals?
- (b) What do you mean by sleep apnea and akinetic mutism? 3+(2+2)
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