

2011

MOLECULAR BIOLOGY – GENERAL - PRACTICAL

Fourth Paper

Group – B

(Biophysics)

Full Marks –20

The questions are of equal value

Answer *any one* question

1. An ECG records or a portion of ECG records of human heart is supplied to you.

Answer the following questions to the point

- (i) What is the difference between Electrocardiogram and Electrocardiograph?
- (ii) Mention at least three criteria by which the abnormality of an ECG record can be detected.
- (iii) On which parts of the human body electrodes are attached for recording of ECG?
- (iv) Calculate the rate of heart beat from the ECG supplied to you.

2. An X-ray photograph of chest of human body is given to you. Carefully observe the picture and answer the following questions

- (i) What are the contrast materials commonly used in diagnostic radiology?
- (ii) List some causes of blurring in an X-ray and how does the blurring reduced?
- (iii) How do you distinguish between bones and soft tissues?
- (iv) Why the heart is not clearly seen in the chest X-ray?

3. An ultrasonogram of a particular part of the human body is supplied to you. Answer the following questions briefly.

- (i) What is the difference between an ultrasonic A scan and ultrasonic B scan?
- (ii) What is the advantage of using ultrasound for diagnostic purpose over X-rays?
- (iii) Discuss the physical principle for obtaining a typical USG picture of human organ.
- (iv) Give some examples of using ultrasound for the purpose of medical treatment.