

2  
053

0305E341

Candidate's Seat No : \_\_\_\_\_

M.Sc. (Sem.-II) Examination

407

CB Cytogenetics-II

May-2017

Time : 3 Hours]

[Max. Marks : 70

**Instructions:**

**All Questions are compulsory**

**Draw neat and labelled diagram wherever necessary**

- 1 14  
a Describe banding method used to study Y chromosome.  
Or  
a Describe non-banding method used to study chromosome aberrations.  
b Write a note on advantages and limitations of FISH technique.  
Or  
b Write a note on slide preparation and pre-treatment required for FISH study in solid tumors.
- 2 14  
a Explain the Principle and Applications of RHG banding in cytegenetic study.  
Or  
a Write a note on banding method used to study 1,9,16,& Y chromosomes.  
b Describe manual FISH protocol.  
Or  
b Write a note on Enzymatic pretreatment of the slide in M-FISH.
- 3 14  
a Write a note on importance of various filters in fluorescence microscopy.  
Or  
a Write a note on phase-contrast microscopy.  
b What are the different sources and route of transmission of laboratory associated infections?  
Or  
b Write in detail about the essential standard precautions to be maintained in a biomedical laboratory.
- 4 14  
a Write a note on centrifuge rotors.  
Or  
a Describe pH meter and its calibration.  
b Write a note on Mechanical safety.  
Or  
b Write a note on management of Biomedical waste and its disposal.

(P.T.O.)

## 5. Multiple Choice Questions

(Mark (✓) the correct answer of the multiple choice questions)

1 Which band method is just opposite to G bands?

- a GTG                                  b RHG  
c CBG                                  d GAG

2 Applying QM banding following chromosome heteromorphism can be identified?

- a Chromosome 9                      b Chromosome X  
c Chromosome 15                      d Chromosome Y

3 C banding used to identify.....

- a chromosome 16 and Y centromere      b chromosome 1 centromere  
c chromosome 9 centromere              d All of the above

4 In Nick translation exonucleolytic activity carried out by enzyme ---

- a DNase III                              b DNase I  
c DNA pol I                              d DNA pol III

5 Wavelength range for DAPI filter in FISH

- a 358-461                              b 426-480  
c 524-550                              d 494-517

6 M-FISH cannot use for detection of intra-chromosomal rearrangements like

- a Duplications                          b Deletions  
c Inversions                              d All of above

7 Interferometer use in which technique

- a Q-FISH                                  b M-FISH  
c SKY-FISH                              d COBRA-FISH

8 Formula use for combinations of fluorophores

- a  $2^n+1$                                   b  $2^n-1$   
c  $n^2+1$                                   d  $n^2-1$

9 What is used for routine cleaning supplies?

- a 70% isopropyl alcohol              b 75% isopropyl alcohol  
c 70% Methyl alcohol                  d 75% Methyl alcohol

10 Combinatorial labeling is applied in following multiplex FISH

- a COBRA FISH                          b Multicolor FISH  
c Spectral Karyotyping                  d All of the above

11 Which of the protection devices required for working in UV light?

- a Safety glasses                        b Safety gloves  
c Safety shield                         d All of above

12 ----- arise from spontaneous fission of some isotopes and are produced by atomic reactors and accelerators

- a Alpha particles                        b Beta particles  
c Gamma rays                            d Neutron

13 Peracetic acid used to sterilize -----

- a surgical instruments                  b HEPA filters in BSCs  
c Bronchoscopes.                        d heat-sensitive objects

14 LJ charts are used for graphical representation of the control ranges, where LJ stands for

- a Lincoln Johns                         b Levey Jennings  
c Lynard Joiners                         d Lee Johns