



NAX-003-001420 Seat No. _____

B. Sc. (Sem. IV) (CBCS) Examination

March / April - 2017

Microbiology : Paper - MB - 401

(Analytical Techniques & Bioinformatics)

Faculty Code : 003

Subject Code : 001420

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All questions are compulsory.
(2) Figures at the right side indicate total marks.
(3) Draw figure wherever necessary.

1 Answer the following : **20**

- (1) If the number of neutrons plus the number of protons is odd, then the nucleus has _____ spin.
- (2) Element having same atomic number but different atomic mass is called _____.
- (3) _____ is used for the determination of metals.
- (4) The distance travelled by light as it passes through a cuvette is called _____.
- (5) In Chromatography, separation of analyte is based on _____.
- (6) Ethidium Bromide is dye used to stain _____.
- (7) Mercaptoethanol disrupts proteins whose polypeptide chains are linked by _____ bond.
- (8) Name the Chromatography technique in which Ligands are used for the separation of product.
- (9) Give full form of VNTR.
- (10) Northern Blotting technique is used for the detection of _____.
- (11) _____ is enzyme used to synthesize DNA in PCR.
- (12) DNA replication proceeds in a _____ to _____ direction.

- (13) _____ is the network used in the same building.
- (14) _____ is the example of volatile memory.
- (15) 1MB= _____ kb.
- (16) Netscape navigator is an example of web _____.
- (17) FASTA file format begins with _____ symbol.
- (18) Bankit is data _____ tool.
- (19) Incyte is an example of _____ database.
- (20) Complete set of small molecule metabolites is _____.

- 2 (a) Answer Specifically : (Any 3) 6**
- (1) What is Beer's Law?
 - (2) How is spin assigned to nucleus?
 - (3) What is resolution in chromatography?
 - (4) What is forward and reverse primer?
 - (5) What is mail merge?
 - (6) What is database?
- (b) Answer Specifically : (Any 3) 9**
- (1) Give Principle of Infra-red Spectroscopy.
 - (2) What is Size exclusion Chromatography?
 - (3) Write in brief about capillary electrophoresis.
 - (4) What is RFLP?
 - (5) What is IP address, Http and URL?
 - (6) What is Gap penalty?
- (c) Write short notes on : (Any 2) 10**
- (1) Use of radioisotopes in biology.
 - (2) HPLC.
 - (3) DNA sequencing.
 - (4) Multimedia
 - (5) Drug Discovery.

- 3 (a) Answer Specifically : (Any 3) 6**
- (1) How vibrational frequencies are calculated in IR Spectroscopy ?
 - (2) Give principle of Electrophoresis.
 - (3) Give four applications of Gas Liquid Chromatography.
 - (4) What is FISH? Give its two applications.
 - (5) Write any four functions of MS Excel.
 - (6) What is QSAR?
- (b) Answer Specifically : (Any 3) 9**
- (1) What is electronic transition? Discuss technique based on it.
 - (2) What is PAGE?
 - (3) What is native gel? How it differs from SDS Gel?
 - (4) What is blotting technique? Enlist various types of blotting techniques.
 - (5) Write applications of Internet.
 - (6) What is Blast? Give its applications.
- (c) Write short notes on : (Any 2) 10**
- (1) Nuclear Magnetic Resonance Spectroscopy.
 - (2) Agarose Gel Electrophoresis.
 - (3) Biosensor.
 - (4) HTML.
 - (5) Omics technology.
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