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**PK-520**

**M.Sc. IV Semester Microbiology (OLD  
ATKT) Examination June 2018**

**BIODIVERSITY AND  
BIOTECHNOLOGICAL APPLICATIONS**

**Paper - IV**

*Time Allowed : Three Hours]*

*[Maximum Marks : 85*

**Note :** Attempt all questions.

**Section - A**

**Objective Type Questions**

**Q.1. Choose the correct answer:**       $15 \times 1 = 15$

- i) The branch of biology that deals with identification, naming and classifying an organism is called
- Sequencing
  - Taxonomy
  - Probes
  - Ecology

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**(2)**

- ii) Type of RNA which carries genetic information copied from DNA in form of series of three base codes is
- t-RNA
  - m-RNA
  - r-RNA
  - All of the above
- iii) When two species are closely related they
- Share a gene pool
  - Share a common ancestor
  - Interbreed
  - All of the above
- iv) Methanogens belong to
- Archaeabacteria
  - Eubacteria
  - Both a and b
  - None
- v) Extreme halophiles are found in
- Hot springs
  - Antarctic ice mass
  - Salt lakes
  - Animal intestine

(3)

- vi) Mesophiles prefer a temperature range of \_\_\_\_\_ to grow
- 0°C
  - 10-15°C
  - 35°-45°
  - None
- vii) Which one of the following is not a free living nitrogen fixer
- Azotobacter
  - Rhizobium
  - Azospirillum
  - Clostridium
- viii) Which one of the following is photosynthetic microorganism
- Chlorobium
  - Cyanobacteria
  - Chromatium
  - All of them
- ix) Proteobacteria are gram negative bacteria considerable importance as
- Nitrogen fixers
  - Disease agent
  - Major experimental organisms
  - All of these

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(4)

- x) An example of green sulphur bacteria is
- Chlorobium
  - Rhodopseudomonas
  - Chromatium
  - E.Coli
- xi) The deinococci are gram positive cocci and rods that are distinctive in their
- Resistance to environmental hazards
  - Thick cell walls
  - Amino acid composition
  - All of the above
- xii) The main characteristic feature of phylum thermotoga are
- Gram negative thin peptidoglycan contains cell wall
  - An aerobes who can reduce elemental sulphur to H<sub>2</sub>S
  - Both a and b
  - None
- xiii) Protein sequence database are stored in
- |          |               |
|----------|---------------|
| (a) PIR  | (b) EMBL      |
| (c) DDBJ | (d) Gene bank |

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(7)

Q.9. Describe phylum Verrucomicrobia.

**OR**

Write important features of purple phototrophic bacteria.

Q.10. Write short note on thermotoga and aquifers.

**OR**

Write distinguishing characters of phylum Deinococcus.

Q.11. Write in brief on:

- a) Sequence alignment
- b) Scoring matrices

**OR**

Explain database search for homologous sequence.

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