

VPG (1)–Z (1)

2017-19

Full Marks : 70

Time : 3 hours

Q.No.1 is compulsory. Answer two questions from each Group .

The questions are of equal value.

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

1. Answer the following questions :

- (a) The piece of extra nuclear DNA that is used for inserting foreign DNA is called ———.
- (b) Human insulin is produced by the technique of ———.
- (c) What is Colorimetry ?
- (d) What is Cytotaxonomy ?
- (e) What is molecular phylogenetics ?

(Turn Over)

(2)

- (f) Cytoplasm has no role in cell differentiation (True/False)
- (g) In electrophoresis, the buffer established contact between ———.

GROUP—A

- 2. Describe chemotaxonomy, cytotaxonomy and molecular taxonomy with suitable examples.
- 3. Discuss nucleic acid phylogeny-DNA-DNA hybridization, restriction enzyme site mapping technique, nucleotide sequence comparison with illustrations. <http://www.vbuonline.com>
- 4. What are Bioenergetics ? Describe laws of thermodynamics and its relevance to biological system.
- 5. Describe secondary metabolites its introduction to Natural products chemistry with examples.

GROUP—B

- 6. Describe general principle and applications of flame photometer and ultra centrifuge.

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(Continued)

(3)

7. Discuss separation techniques i.e., chromatography, principle type and application with suitable examples.
 8. What are histological techniques, its principles of tissue fixation microtomy and mounting.
 9. Describe histological stains , histochemical identification, and localization of the following :
 - (a) General lipids by Sudan Black B method
 - (b) DNA and RNA by Methyl green pyronin-Y.
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