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(20517)

Roll No.

B.Sc.Micro.-I Yr.

3489

B.Sc. (Microbiology) Examination, May 2017

Bio-Physics

(B-106)

Time : Three Hours /

[Maximum Marks : 50]

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. Explain chirality and uses of chirality in bio-molecules. 10
2. Write short notes on the following :
 - (i) Scope of Bio-Physics 5
 - (ii) Properties of open systems 5
3. (a) State the 'First and Second Laws of thermodynamics. 2

P.T.O.

(b) Discuss the applications of the laws of thermodynamics to cellular respiration and photosynthesis. 8

4. Describe the conformatinoal properties of enzymes. 10

5. Write short notes on the following :

(a) Photoreception in vertelerates 5

(b) Electrical activity of rhodopsin 5

6. Describe the physical aspects of photorecep-
tion with special reference to Bacterior-
hodopsin. 10

7. Write short notes on the following :

(a) Relationship between Physics and Biol-
ogy 5

(b) Electricity as a potential signal. 5

8. Explain biological compartments and describe
the electrical properties of biological com-
partments. 10 (2+8)

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9. Explain biomechanics and discuss the bio-
mechanics of striated muscles. 2+8=10

10. Explain chemiosmotic couplings and describe
biomechanics of cardiovascular system.

4+6=10

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Roll No. R170935135026

B. Sc. (Micro.) -I Year

3489

B. Sc (Microbiology) Examination, May 2018

Biophysics

(B-106)

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt any five questions. All questions carry equal marks.

- ✓ 1. What is Chirality ? Explain the applications of Chirality in biomolecules. 2+8
- ✓ 2. Write short notes on the following : 5+5
 - (a) Relationship between Physics and Biology
 - (b) Properties of open system.
- ✓ 3. What are enzymes ? Explain enzyme substrate interactions. 2+8

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4. Write short notes on the following : 5+5
- (a) First law of thermodynamics
 - (b) Conformational properties of enzymes.
5. What is photoreception ? What are photoreceptor proteins ? Discuss the different types of photoreceptors. 2+2+6
6. What are biological compartments ? Discuss the use of electricity as a potential signal in various biological compartments. 3+7
7. Write short notes on the following : 5+5
- (a) Enzyme kinetics
 - (b) Electrical properties of biological compartments.
8. Explain biomechanics and discuss the biomechanics of locomotory organs in vertebrates. 10
9. Explain chemiosmotic coupling with special reference to photosynthesis. 10
10. Explain the mechanism of energy transfer during respiration. 10

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Roll No. R180935130005

Total Questions : 10]

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**B.Sc. (Microbiology) Ist Year Examination,
May-2019**

BIO-PHYSICS

(B-106)

(B.Sc.-Micro)

Time : 3 Hrs.]

[M.M. : 50

Note :- Attempt any *five* questions. All questions carry equal marks.

1. What is chirality ? Discuss the effect of chirality of biomolecules in living system. 2+8
2. Write short notes on the following :
 - (i) Relationship between physics and biology
 - (ii) Scopes and methods of biophysics 5,5

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Turn Over

3. What are Enzymes ? Explain the conformational properties of enzymes. 2+8

4. Explain the first and second laws of thermodynamics. Give their applications in biological systems. 5+5

5. What do you mean by photoreception ? What are photoreceptor proteins ? Discuss different types of photoreceptors. 5+5

6. What are biological compartments ? Discuss the use of electricity as a potential signal in various biological compartments. 3+7

7. Write short notes on the following :

- (i) Enzyme substrate interactions.
- (ii) Conformational properties of enzymes 5,5

8. Write short notes on the following :

- (i) Bacteriorhodopsin
- (ii) Chemiosmotic theory 5,5

9. Explain biomechanics and discuss the biomechanics of locomotory organs in vertebrates. 10

10. Explain chemiosmotic coupling with special reference to respiration. 10