

A

(20622)

(Printed Pages 3)
Roll No.

B.Sc.(Micro.) - I Yr.

3489-N

B.Sc. (Microbiology) Examination,

June-2022

BIO-PHYSICS

(B-106)

[B.Sc. (Micro.)]

(New)

Time : Three Hours / Maximum Marks : 50

Note : Attempt any five questions. All

questions carry equal marks.

1. Discuss the use of biophysical principles like diffusion, surface tension and ultrafiltration in biology.

10

P.T.O.

2. Write short notes on :
(a) Radioactivity 5
(b) Open System 5
3. What are enzymes? Discuss conformational properties of enzymes.

$$2+8=10$$

4. Write short notes on :
(a) Living body as thermodynamic system. 5
(b) Biophysics of enzyme substrate reaction. 5
5. Describe the process of photosynthesis. 10
6. Discuss the biophysics of vision and hearing. 5+5=10
7. Write short notes on :
(a) Electrical properties of a bio membrane 5
(b) Use of membrane potential in neurotransmission. 5

3489(N)/2

8. Explain molecular transport across cell membranes. 10
9. Explain chemiosmotic coupling with special reference to respiration. 10
10. Explain the mechanism of muscle contraction in striated and cardiac muscles. 10

No. of pages : 3 (Printed Pages 3)

(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 biomolecules. 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. 3

4. Describe the conformatinoal properties of

enzymes.

5. Write short notes on the following :

(a) Photoreception in vertebrates

(b) Electrical activity of rhodopsin

6. Describe the physical aspects of photoreception with special reference to Bacteriorhodopsin.

7. Write short notes on the following :

(a) Relationship between Physics and Biology

(b) Electricity as a potential signal.

8. Explain biological compartments and describe the electrical properties of biological compartments.

10 (2+8)

3489/2

- 9 ✓ Explain biomechanics and discuss the biomechanics of striated muscles. $2+8=10$
10. Explain chemiosmotic couplings and describe biomechanics of cardiovascular system.

$$4+6=10$$

D

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(20524)

Roll No.

B.Sc. (Micro.)-I Yr.

3489

B.Sc. (Microbiology)

Examination, May-2024

BIO-PHYSICS

(B-106)

[B.Sc (Micro.)]

Time : Three Hours / Maximum Marks : 50

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

1. (a) Define radioisotopes? What is radioactive decay? 2+3
- (b) Explain the biophysical principles of Ultra filtration? 5
2. Write short notes on :
 - (a) Properties of open systems. 5
 - (b) Role of diffusion in biological systems 5

P.T.O.

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Roll No. R.180979131031

Total Questions : 10]

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B.Sc. (Microbiology) 1st Year Examination,
May-2019

BIO-PHYSICS

(B-106)

(B.Sc.-Micro)

Time : 3 Hrs. / I 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

NA-320

(1)

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

A. 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

NA-320

(3)

A

(20622)

Roll No.

B.Sc.(Micro.) - I Yr.

(Printed Pages 3)

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B.Sc. (Microbiology) Examination,

June-2022

BIO-PHYSICS

(B-106)

[B.Sc.(Micro.)]

(Old Course)

Time : Three Hours / Maximum Marks : 50

Note : Attempt any **five** questions. **All**

questions carry equal marks.

1. Discuss the use of biophysical principles like diffusion, surface tension and ultrafiltration in biology.

10

P.T.O.

2. Write short notes on : 5
(a) Radioactivity 5
(b) Open System
3. What are enzymes? Discuss 5
conformational properties of enzymes.

$$2+8=10$$

4. Write short notes on :

- (a) Living body as thermodynamic 5
system.

- (b) Conformational properties of 5
enzymes.

5. What do you mean by photoreception? 5

What are photoreceptor proteins. Discuss with special reference to Bacteriorhodopsin.

$$2+2+6=10$$

6. Define biological compartments? Discuss 5
the electrical properties of biological
compartments. 3+7=10

7. Write short notes on :

(a) Enzyme kinetics

5

(b) Electrical properties of biological compartments

5

8. Explain biomechanics and discuss the biomechanics of cardiovascular system 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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B. Sc. (Micro.) -I Year

3489

Roll No. **R120929136017**

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**

(2)

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