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01839 OF KARNATAKA
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Kadaganchi, Aland Road, Kalaburagi Dist-585367
Website: www.cuk.ac.in

School	Life sciences
Department	Life science
Program	BSc (Life sciences + Geology)
Backlog Semester	1

CENTRAL UNIVERSITY OF KARNATAKA EXAM BRANCH

End Semester Question Paper: BSc life science (Batch 2022) JAN 2024

Course Code:	ULSPC10002	Credit	04	Course Name:	Cell Biology and Genetics

Time: 2 Hrs 30 min. **Max. Marks: 60**

Instructions:

1. *Draw the diagram(s) wherever necessary.*
2. *Extra questions attempted will not be considered for evaluation.*

SECTION A

5 x 5 = 25

I. Answer **any five** questions:

1. Electron Microscope
2. Cell Theory
3. Fluid Mosaic Model
4. Chloroplast
5. Mutation
6. Osmosis
7. Peroxisomes
8. Photosynthesis

1 x 20 = 20

II. Answer **any One** question.

9. Draw the structure of Mitochondria. Mention the major functions of Mitochondria. Highlight the similarities with Chloroplast.
10. Draw the structure of Nucleus. Mention the major functions of Nucleus. Describe the nuclear import process.
11. What is Mitosis? Explain different stages of mitosis with proper diagram.

SECTION B

Answer **any three** of the following: 3 X 5 = 15

12. Explain the termination phase of protein synthesis.
13. How mRNA post-translation process occurs in prokaryotes?
14. Discuss the experiment that proved semi-conservative mode of replication.
15. Write a note on enzymes of DNA replication.

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CENTRAL UNIVERSITY OF KARNATAKA EXAM BRANCH

School	Life Sciences
Department	Life Science
Program	B. Sc.
Semester	I
Course Code	ULSCS10100

END SEMESTER EXAMINATIONS, MONTH JANUARY YEAR 2024

COURSE: FIELD BIOLOGY TECHNIQUES	Max. Marks: 45	Duration: 02 Hrs	Credits: 03

INSTRUCTIONS:

1. Write exact question no. against the answer
2. Write neat diagrams wherever necessary

PART: A: Answer **ANY TWO** questions (2x10 =20)

1. Discuss the basic principles of Plant Taxonomy/Systematics.
2. What is a Field notebook? Explain various aspects related to the use of the **Field notebook**.
3. What are the different considerations in **Finding a botanical specimen** in the Field?

PART: B: Answer **all 5** questions (5 x 5 = 25)

4. What is scientific method of enquiry? Explain the steps involved
5. What are alpha, beta and gamma measurement of biodiversity. Explain using examples
6. Explain any two dominant indices to measure alpha diversity and their mathematical formulas
7. Explain the principle to study plant population frequency by quadrat method
8. There are 40 species found in community 1 and 50 species in community 2. Between them, they have 8 species in common. Calculate Sorenson's Index (2a/2a+b+c)

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School	LIFE SCIENCES
Department	LIFE SCIENCE
Program	UG
Semester	1ST SEMESTER
Course Code	ULSTC10100

END SEMESTER EXAMINATIONS, MONTH:JANUARY YEAR: 2024

Course: DIVERSITY OF LIFE FORMS	Max. Marks:60	Duration: 150min	Credits: 4

INSTRUCTIONS:

1.Read the questions carefully and choose the appropriate answer (Part A)

2.Draw neat diagrams wherever necessary, to support your answer.

I. PART- A (10× 1=10 marks)

Choose the correct answer :

1. The conservation method considered as 'living laboratory' is

   (a) Wildlife sanctuary (b) Biosphere reserves (c) Sacred grove (d) National parks

2. The RNA acting as ribozymes is

   (a) r-RNA (b) t-RNA (c) m-RNA (d) ribo- RNA

3.All of these are fibrous protein except:

   (a)Myosin (b) Silk (c) Insulin (d) Hair

4. The cell wall of diatoms are made up of

   (a)Selenium (b) cellulose (c) Silica (d) Chitin

5."Rafflesia" , the largest flower is found in which of the hotspots

   (a)Himalaya (b)Indo-Burma (c)Western Ghat (d)Sundaland

6. Carbon-14 radio dating is accurate in dating objects that are upto

   (a)50,000 years old (b) 500 years old (c) 50 million years old (d)5,000 years old.

7. Region with highest biodiversity is

   (a)Temperate region (b) Tropical region (c) Polar region (d)Arid zones

8 . The smallest bacteria, without cell wall is

(a)Methanococcus (b) E.coli (c) Yeast (d) Mycoplasma

9. **Albedo** means

(a)surface reflectance (b) heat exchange (c)moisture content (d) humidity

10. Modern Humans are part of

(a)cenozoic era- tertiary period (b)Cenozoic era- quaternary period
(c)Cenozoic era- Triassic period (d)Cenozoic era – devonian period

II. PART – B (6×5 = 30 marks)

Answer briefly ANY SIX of the following :

1. Write a note on phylogenetic tree & Cladogram .
2. Explain the experiment done by Louis Pasteur to support Biogenesis.
3. Define life. Explain the properties of the living organisms.
4. Write a note Kingdom Protista.
5. Differenciate between gram positive and gram negative bacteria.
6. State the laws of thermodynamics & their application in the biological system.
7. Define biodiversity. Explain the threats to biodiversity.
8. Define the following:
   i. Globular proteins
   ii. Coacervates
   iii. Microsphere
   iv. Radio Dating
   v. Bioprospecting
9. Explain Carbon cycle.

III. PART – C (2×10 =20 marks)

Answer any TWO of the following .

1. Explain different theories of origin of life.
2. Write a note on in-situ & ex-situ conservation of biodiversity.
3. Briefly explain 3 Domain classification by Carl Woese.
4. Write a note on Biodiversity Hot Spots in India.

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School	LIFE SCIENCES
Department	LIFE SCIENCES
Program	UG
Semester	1ST SEMESTER
Course Code	ULSTM10100

END SEMESTER EXAMINATIONS, MONTH:JANUARY YEAR: 2024

Course: INTRODUCTION TO DIVERSITY OF LIFE FORMS	Max. Marks:60	Duration: 150min	Credits: 4

INSTRUCTIONS:

1.Read the questions carefully and choose the appropriate answer for Part A

2.Draw neat diagrams wherever necessary, to support your answer.

I. PART A (10× 1=10 marks)

Choose the correct answer :

1. The word **"Panspermia"** means-

   (a)Seeds from space (b) seeds everywhere (c) seeds on earth (d) extraterrestrial seed

2. Pick the **odd one** out

   (a)Francesco Redi (b) George Cuvier (c)Lazzaro spallanzani (d) Louis Pasteur

3.The number of **peptide bonds** in **heptapeptide** is:

   (a)Three (b) Five (c) Six (d) Four

4. The layer of the earth associated with phenomenon of volcano & earthquakes are

   (a) crust (b)core (c)mantle (d) all of the above

5. "Cohort" is a category placed in between

   (a)class & order (b)Family & genus (c)order& family (d)class& genus

6. Coelenterates are:

   (a)True coelomates (b) Diploblastic (c)Pseudocoelomates (d)Unicellular

7. Who Declares Biodiversity Hotspots?

   (a)IUCN (b) ICZN (c) ICBN (d) Conservation International

8 .The first living things were anaerobic because:

(a)They evolved in deep sea (b)There was no free oxygen in air
(c) Oxygen interfered with ribozymes (d) Oxygen hindered formation of protobiont

9. The four horned antelope is

(a) Bharal (b) Bharasingha (c) Chausingha (d) Chinkara

10. All the activities are allowed in the buffer zone, except

(a)Tourism (b) Forestry (c) education activity (d) research.

II. PART - B (6×5 = 30 marks)

Answer briefly ANY SIX of the following :

1. Briefly explain Miller -Urey experiment.
2. Laws of thermodynamics in biological system.
3. Explain the threats to biodiversity.
4. Explain the properties and importance of water.
5. Explain carbon cycle with diagram.
6. Write a note on kingdom protista.
7. What are Proteins? Explain the structure of proteins.
8. Define the following:
   i. Species richness
   ii. Biodiversity hotspot
   iii. IUCN red list
   iv. Bioprospecting.
   v. Cohesion and adhesion

III. PART – C (2×10 =20 marks)

Answer in detail any TWO of the following .

1. With neat labelled diagram explain plant and animal cell.
2. Write a note on In-situ and Ex-situ conservation.
3. Write a note on Biodiversity Hot Spots in India.
4. What are carbohydrates? Explain their classification.

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School	Life Science
Department	Life Science
Program	B.Sc (Major)
Semester	III
Course Code	ULSTC30200

END SEMESTER EXAMINATIONS, MONTH January YEAR 2024

Course: B.Sc. III rd sem (Major)	Max. Marks: 60	Duration: 2hr 30 mints	Credits: 4
Subject: Biochemistry		Subject code: ULSTC30200	

INSTRUCTIONS: Explain with figures and labeling carries more clarity

1. Q. No.I Multiple choice questions 1 × 10 = 10 M
2. Q. No.II Short Answers 5 × 4 = 20 M
3. Q. No.III Long answers 15 ×2 = 30

Total = 60 M

Question paper set A

Q. No 1. All questions compulsory **1×10=10 M**

A. Write basic structure of any atom.
B. Define Electro negativity with example.
C. Galactose is a .....
D. Define turn over number of enzymes.
E. Write the Full form of SGPT.
F. Define respiration.
G. Define Anabolism and catabolism.
H. First and second law of thermodynamics.
I. Who introduced the name enzyme
J. Define isoenzymes.

Q. NO.2 Write a note on any 4 **5×4=20 M**

a . Factors affecting enzyme activity.
b. Write various functions of proteins.
c. Three fates of catabolic pyruvate.
d. Chaperon functions
d. Applications of immobilized enzymes.
e. ATP synthase

Q. NO.3 Answer by describing any 2 **15×2=30 M**

A.i. Regulation of Enzyme ii. Lipid classification
B. i. Enzymes involved in Citric acid cycle regulation. ii. Chemiosmotic hypothesis
C. i. Enzymes in diagnosis and enzymes in therapy
D. i. Carbohydrate classification ii. Vitamins

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School	**Life Science**
Department	**Life Science**
Program	**B.Sc. Life Science**
Semester	**IIIrd**
Course Code	**ULSCS10200**

END SEMESTER EXAMINATIONS, MONTH: January, YEAR: 2024

Course:**Medical Microbiology**	Max. Marks:45	Duration:120 min.	Credits:3

Differentiate the following terms with examples: Answer any of two questions (2x7.5=15)

1. Prebiotics, Probiotics, Postbiotics
2. Symbiosis, Commensalism, Parasitism
3. Invasion, Evasion, Colonization

Answer any five questions: (5x6=30)

4. Compare the Koch's Postulates, Molecular Koch's Postulates and Next generation Koch's Postulates (use table for Compare these three).
5. Explain the role of Host factors and Pathogen factors in disease progression/pathogenesis.
6. Explain the stages of pathogenesis caused by any microorganism by illustration.
7. Explain the different types of vaccine. Write briefly about stages of vaccine development.
8. Explain the work of Edward Jenner and how did it help tp grow the field of Medical Microbiology.
9. How the ecological conceptss like allelopathy and succession help us in understanding biology of the microbiota?

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School	Life Science
Department	Life Science
Program	B.Sc (Minor)
Semester	III
Course Code	ULSTM30200

END SEMESTER EXAMINATIONS, MONTH January YEAR 2024

Course: B.Sc. III rd sem (Minor)		Subject code: ULSTM30200	
Subject: Fundamentals of Biochemistry	Max. Marks: 60	Duration: 2hr 30 mints	Credits: 4

INSTRUCTIONS: Explain with figures and labeling carries more clarity

1. Q. No.I Multiple choice questions — 1 × 10 = 10 M
2. Q. No.II Short Answers — 5 × 4 = 20 M
3. Q. No.III Long answers — 15 ×2 = 30

Total = 60 M

Question paper set –B

Q. No 1. All questions compulsory **1×10=10 M**

A. Vitamin A functions …..
B. Define buffer and pH
C. Define electronegativity with one example.
D. Galactose is a ……
E. Relative sweetness of fructose is ……
F. Define Turn over number of enzymes.
G. Sphingomyelinase deficiency leads to ……
H. Full form of NAD
I. Define isoenzymes
J. Full form of FAD

Q. NO.2 Write a note on any 4 **5×4=20 M**

a. Write working principle of pH meter
b. Allosteric regulation
c. Vitamins
e. Clover leaf structure of t-RNA
f. Structure of DNA
g. Protein functions

Q. NO.3 Answer by describing any 2 **15×2=30 M**

a. Discuss various forms of protein structures including motif and domain.
b. Write general and specific tests for qualitative analysis of amino acids.
c. i. Two theories of mechanism inloved in enzyme action. ii. Enzyme regulation
d. i. Discuss the Classification of carbohydrates. ii. Protein interactions.