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NB—15—2023

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Course)

BIOTECHNOLOGY

(Biomolecules)

(Tuesday, 05-12-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) All questions carry equal marks.

(iii) Draw diagram if necessary.

1. Define carbohydrates. Discuss in detail classification of monosaccharides.15

Or

(a) Describe in detail structure and functions of oligosaccharides. 8

(b) Describe in detail structure and functions of polysaccharides. 7

2. Describe in detail nomenclature and classification of Enzyme 15

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Or

- (a) Describe in detail classification and role of Enzymes. 8
- (b) Discuss peptides classification with example. 7
3. Describe in detail Watson & Crick model. 15
- Or*
- (a) Explain nucleotides and nucleosides. 8
- (b) Explain properties and biological roles of nucleic acid. 7
4. Define Lipids and discuss classification of lipids with examples. 15
- Or*
- (a) Explain structure and functions of fat soluble vitamins. 8
- (b) Describe in detail Water Soluble Vitamins. 7
5. Write short notes on (any *three*) : 15
- (i) Glycogen
- (ii) ATP
- (iii) X-helix
- (iv) Biological role of lipids
- (v) Forms of DNA.

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NB—04—2023

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Pattern)

BIOTECHNOLOGY

Paper (AECBT-2A)

(Business Communication)

(Thursday, 30-11-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) All questions carry equal marks.

1. What aspects do we take into account while describing a person ? 15

Or

(a) Narrate an accident you witnessed. 7

(b) Describe any place from your last visit. 8

2. Solve any *three* sub-questions among the following : 15

(A) Rewrite sentences with correct form of the word : 5

(1) I refused to accept/except the performance evaluation.

(2) It is easy to give advice/advise, but not so easy to take it.

(3) Not everybody shares my principals/principles.

(4) Whatever happens, do not lie/lay down your weapon!

(5) That breakfast you fixed this morning was good/well.

P.T.O.

WT

(2)

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(B) Give meaning of the following idioms and phrases : 5

- (1) Hit the sack
- (2) The best of both worlds
- (3) Speak of the devil
- (4) A piece of cake
- (5) Don't judge a book by its cover.

(C) Give synonyms of each word : 5

- (1) Lazy
- (2) Imprison
- (3) Benefit
- (4) Humble
- (5) Smooth

(D) Give one word substitution for the following : 5

- (1) A form of government with a monarch at the head
- (2) One who loves mankind
- (3) The killing of a king
- (4) A speech to oneself, alone
- (5) A form of government in which power is held by the nobility.

3. Discuss various types of Reading Skills to do comprehension of text. 15

Or

(A) Choose the option that represents the most logical order : 8

- (i) These were mainly bulwarks against winter, the hoarded dregs of more plentiful seasons.

- (ii) The first were the earliest mince pies, which saw cooked, shredded meat, dried fruits, alcohol with its preservative qualities and perhaps a few spices or herbs, all encased in large pies.
- (iii) Subsequently, people baked this into a kind of pie, adding bread-crumbs for bulk, eggs to bind it, and upping the dried fruits and called it 'plum pudding'.
- (iv) The pudding seems to have had two principal forerunners.
- (v) The second main pudding was a pottage or soup called frumenty, a fast dish involving cracked wheat, currants and almonds which was ladled out at the start of a meal.

(B) Fill in the blanks with the appropriate word from the given options : 7

Around the world, forests are being__(1)__at a rate of about thirteen million hectares a year and deforestation accounts for an estimated 17%–20% of all global emissions. In addition, forests and other terrestrial carbon sinks play a__(2)__role in preventing runaway climate change, soaking up a full 2.6 Gt of atmospheric carbon every year. The destruction of__(3)__, therefore, not only emits carbon—a staggering 1.6 Gt a year, which severely__(4)__forests capacity to absorb emissions from other sources—but also drastically__(5)__the amount of forested land available to act as a carbon sink in the future.

- (1) Ended/destroyed/extinct/killed/wasted
- (2) Tough/important/vital/biggest/effective
- (3) Land/forests/water/air
- (4) Affects/diminishes/increases/alternates/impairs
- (5) Plagues/develops/reduces/shortens/influences

P.T.O.

WT

(4)

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4. Write an application to 'Manager, Kimya Biotech Pvt Ltd, Pune-410 009' for the post of Junior Scientist and add your CV with it. 15

Or

- (a) Write an e-mail to your friend to invite him for your sister's marriage. 8
- (b) Discuss some steps to write a good short story. 7
5. Write short notes on (any *three*) : 15
- (a) Asking for opinions
- (b) Tools to improve spellings
- (c) Objectives of Meeting Agenda
- (d) Basic phrases to talk about recipes
- (e) Complain Letter.

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FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Course)

BIOTECHNOLOGY

(Microbiology–II)

(Thursday, 7-12-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—Three Hours

Maximum Marks—75

N.B. :— (i) Attempt all questions.

(ii) All questions carry equal marks.

(iii) Draw well labelled diagrams wherever necessary.

1. Describe major and minor elements required for microbial growth. 15

Or

(i) Describe natural and synthetic media. 8

(ii) Describe active transport. 7

2. Define bacterial growth. Describe bacterial growth curve. 15

Or

(i) Describe continuous culture. 8

(ii) Describe synchronous culture. 7

P.T.O.

WT

(2)

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3. Describe sterilization by radiation and filtration. 15

Or

(i) Describe autoclave. 8

(ii) Describe sterilization by osmotic pressure. 7

4. Describe alcohol and phenol as disinfectant. 15

Or

(i) Describe chemotherapeutic agents. 8

(ii) Describe pasteurization. 7

5. Write short notes on (any *three*) : 15

(i) Selective Media

(ii) Diauxic growth

(iii) Tyndallization

(iv) Aldehydes

(v) Osmosis.

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FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Course)

BIOTECHNOLOGY

(Principle of Genetics)

(Saturday, 02-12-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.L. :— (i) Attempt *all* questions.

(ii) Each question carries equal marks.

1. Describe in detail Mendel's laws of inheritance. 15

Or

(a) Explain in brief multiple allele. 8

(b) Write a note on complimentary gene and supplementary gene. 7

2. What is linkage ? Describe coupling and repulsion hypothesis of linkage.

15

P.T.O.

WT

(2)

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Or

- (a) Describe in detail crossing over. 8
- (b) Explain in brief numerical changes in chromosomes. 7
3. What is Mutation ? Describe in brief types of mutation. 15
- Or*
- (a) Write a note on Base analogue and Alkylating agent. 8
- (b) Describe in brief classical and modern gene concept. 7
4. What is Plasmid ? Describe in detail types and properties of plasmid. 15
- Or*
- (a) Describe in brief transposable elements. 8
- (b) Write a note on transformation. 7
5. Write short notes on (any *three*) 3×5=15
- (a) Duplicate Gene
- (b) Karyotype Study
- (c) UV Light
- (d) Conjugation
- (e) Transduction

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