

Bachelor of Science Examination: June-2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Wednesday 01-06-2022	IV (Fresh/ Repeater)	English - I	10:30 AM To 11:45 AM	400101	35

Instruction: Attempt all the questions.

Q.1 Read the following passage and answer the following questions:

15

Of all the green things which make up what Goethe called "the living garment of god," grass is one of the humblest, the most nearly omnipresent, and the most stupidly taken for granted—a miracle so common that we no longer regard it as miraculous.

To some (poor things) it is merely what you try to keep the dandelions out of, or what you strike a golf ball across. But even such are paying some tribute to it. To those of us a little more aware of the great mystery of which we are a part, its going and its coming, its flourishing and its withering, are a sort of soft ostinato accompaniment in the great symphony of the seasons.

Even in the arid Southwest it springs up bravely for a few short weeks. In California the brown hills turn to emerald almost overnight. And in the gentler, more circumspect East, one hardly knows when the great awakening took place. So imperceptible, but ineluctable, is its progress that those of us who watch for it never quite catch the very moment when the transformation occurs. While our backs are turned it is alive again, and no other phenomenon of spring is at once so quiet and so all-enveloping. If there are astronomers on Mars peering at us as our astronomers are peering at their planet, they must see, much more dramatically, what is usually observed there by earthly astronomers. Martian vegetation is perhaps only dry-lichen much like what we see clinging on the bare rocks near the summits of our highest mountains. But ours is a green carpet, soft to the feet, restful to the eyes, and announcing to all living things that spring is here again.

What is this thing called grass? "Why," say the botanist, "that is a question easy to answer. Grass, properly so-called, is any one of the numerous genera and species which compose that family of monocotyledonous flowering plants long known as the Gramineae. Unfortunately, its early evolutionary history (like that of all the flowering plants) is obscure since the fossil record is scanty. But at least we can say with reasonable certainty that no grass carpeted the earth in that long ago when the first air-breathing animals crawled out of the water. Also that it was not until the cool weather of the Miocene (say a mere forty million or so years ago) that it became a dominant plant and thus made possible the

flourishing of the herbivorous mammals over a more peaceful earth where the bellowing of the dinosaurs had given way to the lowing of herds. Then only yesterday as world history goes, grass conferred upon our own species that tremendous blessing called wheat.

For a less dusty question and answer we must turn to the poets, many of whom have had their say, though only Walt Whitman put grass at the centre of a magnum opus.

Question:

- 1) Why does the author say that grass is "a miracle so common that we no longer regard it as miraculous?" 01
- 2) What is Gramineae? 01
- 3) What kind of soils on Mars? 01
- 4) Attempt a description of two miracles of nature, namely, rain and the rainbow. 04
- 5) Give one word from the passage for each of the following : 03
 - a) An expert in or student of the scientific study of plants.
 - b) Flowerless small plants of different shades that grow like a patch of skin on stones and tree trunks.
 - c) An elaborate musical composition for an orchestra.
- 6) Use the following word in the sentences of your own: 05
 - a) Vegetation
 - b) Tremendous
 - c) Yesterday
 - d) Omnipresent
 - e) Common

Q.2 Write the instruction manual for any one of the technological product mentioned below:

- a) Camera
- b) Television
- c) Watch

Q.3 Describe the scientific process of any one of the experiment conducted by you in the science laboratory:

- a) An Electric bulb
- b) Concave lens
- c) microscope

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Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Friday 25-11-2022	IV (Repeater)	English – I	02:00 PM To 03:00 PM	400101	35

Instructions: All questions are compulsory.

Q.1 Read the following passage and answer the following questions:

15

Of all the green things which make up what Goethe called "the living garment of god," grass is one of the humblest, the most nearly omnipresent, and the most stupidly taken for granted - a miracle so common that we no longer regard it as miraculous.

To some (poor things) it is merely what you try to keep the dandelions out of, or what you strike a golf ball across. But even such are paying some tribute to it. To those of us a little more aware of the great mystery of which we are a part, its going and its coming, its flourishing and its withering, are a sort of soft ostinato accompaniment in the great symphony of the seasons.

Even in the arid Southwest it springs up bravely for a few short weeks. In California the brown hills turn to emerald almost over night. And in the gentler, more circumspect East, one hardly knows when the great awakening took place. So imperceptible, but ineluctable, is its progress that those of us who watch for it never quite catch the very moment when the transformation occurs. While our backs are turned it is alive again, and no other phenomenon of spring is at once so quiet and so all-enveloping. If there are astronomers on Mars peering at us as our astronomers are peering at their planet, they must see, much more dramatically, what is usually observed there by earthly astronomers. Martian vegetation is perhaps only a dry lichen much like what we see clinging on the bare rocks near the summits of our highest mountains. But ours is a green carpet, soft to the feet, restful to the eyes, and announcing to all living things that spring is here again.

What is this thing called grass? "Why," say the botanist, "that is a question easy to answer. Grass, properly so-called, is any one of the numerous genera and species which compose that family of monocotyledonous flowering plants long known as the Gramineae. Unfortunately, its early evolutionary history (like that of all the flowering plants) is obscure since the fossil record is scanty. But at least we can say with reasonable certainty that no grass carpeted the earth in that long ago when the first air-breathing animals crawled out of the water. Also that it was not until the cool weather of the Miocene (say a mere forty million or so years ago) that it became a dominant plant and thus made possible the flourishing of the herbivorous mammals over a more peaceful earth where the bellowing of the dinosaurs had given way to the lowing of herds. Then, only yesterday as world history goes, grass conferred upon our own species that tremendous blessing called wheat".

For a less dusty question and answer we must turn to the poets, many of whom have had their say, though only Walt Whitman put grass at the centre of a magnum opus.

Questions:

- 1) Why does the author say that grass is " a miracle so common that we no longer regard it as miraculous"? 01
 - 2) What is Gramineae? 01
 - 3) What kind of soil is on Mars? 01
 - 4) Attempt a description of two miracles of nature, namely, rain and the rainbow. 04
 - 5) Give one word from the passage for each of the following: 03
 - a) a German writer
 - b) large but now extinct reptiles
 - c) yellow flowered wild plant
 - 6) Use the following words in the sentences of your own: 05
 - a) planet
 - b) highest
 - c) yesterday
 - d) history
 - e) common
- Q.2** Write the instruction manual for any one of the technological product mentioned below: 10
- a) Camera
 - b) Sandwich maker
 - c) Television
- Q.3** Describe the scientific process of any one of the experiment conducted by you in the science laboratory: 10
- a) An Electric bulb
 - b) Concave lens
 - c) Centrifuge

Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Wednesday 30-11-2022	IV (Repeater)	Clinical Microbiology	02:30 PM To 05:00 PM	407102	75

Instructions: 1) Q.5 is compulsory.
2) Attempt any three from the remaining.
3) All questions carry equal marks.

- Q.1** a) Explain microbial diversity in soils and their activities. 10
b) Write about significance of fecal indicator organism. 10
- Q.2** a) Discuss water purification processes and explain composition of sewage. 10
b) Write about domestic waste water treatment processes. 10
- Q.3** a) Describe air composition, distribution and sources of microorganisms in air. 10
b) Write about the bacteriological examination for water potability. 10
- Q.4** a) Discuss Municipal sewage treatment process. 10
b) Write in brief Carbon, Nitrogen, Sulphur, Phosphorus cycles. 10
- Q.5** Write short notes for the following: (any 3) 15
a) Soil, plants and nutrients
b) Membrane Filter technique
c) Microbiological examination of soil
d) IMVIC test.

Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Wednesday 07-12-2022	IV (Repeater)	Applied Zoology	02:30 PM To 05:00 PM	405101	75

- Instruction:**
- 1) All questions are compulsory
 - 2) Draw neat and labeled diagram wherever necessary.
 - 3) All questions carry equal marks.

- Q.1**
- a) **Fill in the blanks:** 05
- 1) Larva of rice weevil is known as _____.
 - 2) _____ is called milk sugar.
 - 3) The goat is commonly called as _____.
 - 4) _____ is used for the preparation of paints and polishes.
 - 5) Avian flu is caused by _____ virus.

- b) **Match the following:** 04
- | | |
|------------------------|------------------|
| 1) Indigenous breed | a) Leghorn |
| 2) Asiatic breed | b) Bustra |
| 3) American breed | c) Khillari |
| 4) Mediterranean breed | d) Cochin |
| | e) New hampshire |

- c) **Define (Any Three)** 06
- 1) Waggle dance
 - 2) Dairy Science
 - 3) Aseptic packaging
 - 4) Vermicompost

- Q.2 Answer any two of the following.** 15
- a) Explain social life of termites.
 - b) Explain different methods of milk preservation.
 - c) Give the requirement for the construction of poultry house.
 - d) Explain how communication in bees takes place.

- Q.3 Describe any three of the following.** 15
- a) Composition of lac
 - b) Asiatic class of fowl
 - c) Explain economic importance of emu farming
 - d) Indigenous milk product

- Q.4 Write an account on any three of the following.** 15
- a) Uses of honey
 - b) Coccidiosis
 - c) Method of preparation of Cheese
 - d) Damaged caused by termites

Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Friday 09-12-2022	IV (Repeater)	Current Trends in Zoology	02:30 PM To 05:00 PM	405102	75

- Instruction:**
- 1) All questions are compulsory
 - 2) Draw the diagram wherever necessary.
 - 3) Diagrams carry marks.

Q.1 a) Fill in the blanks:

- 1) _____ is joining exon sequence by releasing the intron sequence.
- 2) The lagging strand synthesizes a short fragment called _____.
- 3) _____ is defined as the middle most or the central value of the variable.
- 4) UAA is the code for _____.
- 5) _____ sequence is identified by restriction enzymes.

b) Match the following:

- | | |
|--------------------------|-----------------------------|
| 1) RNA primer | a) graphical representation |
| 2) Polygon frequency | b) eukaryotic transcription |
| 3) Capping | c) Central tendency |
| 4) Plasmid | d) PBR322 |
| 5) Mean, median and mode | e) primase |

c) Define (any 5):

- 1) Cloning
- 2) Replication
- 3) Restriction Enzyme
- 4) Mode
- 5) Transcription

Q.2 Attempt any two of the following:

- a) Explain cloning technique with the help of Schematic representation.
- b) Explain different types of Correlation
- c) Give properties of Genetic code.
- d) Explain the process of initiation of translation in eukaryotes.

Q.2 Attempt any three of the following:

- a) Aminoacylation
- b) Polygon frequency
- c) Insulin-protein produced by gene manipulation
- d) Cosmid

Q.4 Attempt any three of the following:

- Give the properties of cloning vectors.
- Write the merits and demerits of Mode
- Write a note on addition theorem on probability.
- Describe the process of Capping and polyadenylation during transcription in eukaryotes.

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Q.5 Attempt any two of the following:

- Describe the construction of PBR322 plasmid vector.
- Explain the term standard deviation, give its merits and demerits
- Describe the mechanism of semi-conservative replication.
- Explain the technique of Southern Blotting.

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Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Thursday 15-12-2022	IV (Repeater)	Applied Microbiology	02:30 PM To 05:00 PM	407101	75

Instruction: 1) Q. 5 is compulsory.
2) Attempt any three from the remaining.
3) All questions carry equal marks.

- Q.1** a) Describe the NK cells. 10
b) Explain Michaelis Menten Equation and significance of K_m and V_{max} . 10
- Q.2** a) Differentiate between innate immunity and adapted immunity. 10
b) Describe the immune system. 10
- Q.3** a) Explain Cytosolic and Endocytic pathway. 10
b) Write about the feedback and allosteric inhibition. 10
- Q.4** a) Describe structure of enzyme. 10
b) Explain the enzyme concentration and inhibitor. 10
- Q.5** Write a short note. (Any Three) 15
a) Incubation
b) Lymphoid organ
c) Control of epidemics
d) Substrate concentration

Bachelor of Science Examination: May- 2023

Day & Date	Semester	Subject Name	Time	Code	Marks
Thursday 11-05-2023	IV (Fresh/ Repeater)	Inorganic Chemistry-I	11:00 AM To 01:30 PM	402101	75

Instructions: 1) All Questions are Compulsory.
2) All Question Carry equal marks.

Q.1 Attempt any Five.

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- Define the
 - Metal
 - Ligand
 - Co-ordination number
- Define the transition element and general electronic?
- Define the EAN rule with example?
- Discuss the double salt with suitable example?
- Explain the acid base Bronsted and Lowrey theory?
- Define the gravimetric analysis and their types?
- Fill in the blank
 - Donation of H^+ called as _____.
 - Bond order of O_2 Molecule is _____.
 - Primary valancy is the oxidation state of _____.
- Explain Lewis base concept with example concept?
- Define the hard acid and soft acid with suitable example?

Q.2 Attempt any Three.

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- Explain the Ionization potential & colour property of transition element?
- Explain the Pearson of Hard soft Acid and Base concept?
- Explain the following in account of solubility?
 - Common ion effect.
 - Temprature and P^H effect
- Discuss the ionization, linkage, and hydrate isomerism with suitable example?
- Give the importance of following organic reagent in gravimetric analysis?
 - 8- Hydroxy quinolone
 - Dimethyl glyoxime?

Q.3 Attempt any Three

15

- Explain the assumption of VBT and disadvantage of valance bond theory?
- Explain the splitting of Octahydral complex in d^5 and d^{10} system?
- How the acid and bases classified according to Lewis concept with suitable example?
- Explain electro neutrality and principal of back bonding?
- Explain the term
 - Magnetic property
 - Atomic Size
 - Colour.

Q.4 Attempt Any Three

- a) Give the brief account of "Treatment of Precipitate"
- b) Explain the
 - i) Digestion
 - ii) Filtration
 - iii) Washing
- c) Explain the EAN rule [Cr (Co) 6] [Ni (Co) 4] [Ni (CN) 4] with these examples?
- d) Give an account of variable oxidation state and Oxidation potential?
- e) Calculate the CFSE of d^5 , d^6 , d^7 in low spin complexes?

Q.5 Attempt Any Three

- a) Explain the M.O diagram of O_2 molecule with bond order its stability?
- b) Explain briefly molecular orbital theory & discuss the formation of B_2 molecule?
- c) Construct a labelled of molecular orbital diagram N_2 molecule & comment on its stability?
- d) Explain the application of 4, 5, 6 Co-ordination complex.
- e) Explain the CO, NO, CN bond order and its bond length.

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