Exam. Code : 107401
Subject Code : 2229

B.Sc. Biotechnology 1st Semester

ZOOLOGY–A

Paper–BT–1

Time Allowed—3 Hours] [Maximum Marks—40

Note : Section A is compulsory. Attempt any **FIVE** questions from Section B and any **TWO** questions from Section C.

SECTION–A

Write in short about :

1. Role of bile in digestion of fats
2. Digestive enzymes products by exocrine tissue of pancreas
3. Homeostasis
4. Role of lymph in circulatory system
5. Alveolar air
6. Vital capacity of lungs
7. Dermis
8. Functions of skin. 1×8=8

SECTION–B

9. Explain the process of digestion of lipids.
10. Write a note on symbiotic digestion.

11. What is cardiac output and discuss the factors controlling it ?
12. Write a note on mechanism of blood clotting.
13. Briefly explain the chloride shift.
14. Give an account of types and phases of respiration.
15. Discuss the structure of horns in mammals.
16. Describe the microscopic structure of mammalian skin.

4×5=20

SECTION–C

17. Describe in detail the structure and types of teeth in man. Also explain the dental formula.
18. Describe the origin and regulation of heart beat in man.
19. Discuss in detail the mechanism of transport of oxygen.
20. Define integument and name the types of integumentary derivatives. Explain the structure of hair in mammals.

6×2=12

Exam. Code : 107401
Subject Code : 2230

B.Sc. Biotechnology I[st] Semester

BT-2 : BOTANY-A

Time Allowed—3 Hours] [Maximum Marks—40

Note :– Attempt **all** questions from Section-A, **five** questions from Section-B and **two** questions from Section-C. Be brief and to the point in your answers.

SECTION–A

1. Give very short answers, not exceeding about **1/3** of a page, to each of the following questions. Each question carries **1** mark.
   (a) Which part of the short apex refers to plerome ? Comment upon its function.
   (b) What do you understand by ring porus and diffuse porus wood ? Explain giving one example each.
   (c) Name the most common type of embryo sac in the ovules of angiosperms. Comment upon its structural peculiarities.
   (d) How does parthenogenetically developed embryo differs from apogamously developed embryo ?
   (e) Define Herkogamy. Comment upon its biological significance.
   (f) Comment upon the disadvantages of autogamy.
   (g) Compare the gynoecium of family solanaceae with that of family Liliaceae.
   (h) Explain the phenomenon of triple fusion and double fertilization.

SECTION–B

2. Give answers of upto **2** pages for any **five** of the following questions. Each such question carries **4** marks.

   (a) Give an illustrated account of the Tunica-Corpus theory so as to explain the apical organization of the shoot.

   (b) Comment upon the various anomalies that are generally found in the internal structure of Dicot stems. Give an illustrated account of the *Nyctanthes* stem depicting anomalous peculiarities.

   (c) Give an account of various stages in the development of male gametophyte.

   (d) Give an illustrated account of the development of endosperm.

   (e) Give an account of the structure and dehiscence of anther.

   (f) Write explanatory note on each of the following :

      (i) Aestivation

      (ii) Floral symmetry.

   (g) Write diagnostic characters of family Rutaceae and Solanaceae.

   (h) Write brief notes on each of the following :

      (i) Male sterility

      (ii) Advantages of cross pollination.

SECTION–C

3. Attempt any **two** of the following questions. Answer to each such question should not exceed **5** pages and each question will carry **6** marks.

   (a) Define secondary growth. Give an illust rated account of formation of secondary vascular tissue in the stem of *Helianthus annuus*.

   (b) Define polyembryony. Give an illustrated account of development of multiple embryos in dicots.

   (c) Give an illustrated account of development of megasporangium and megagametophyte in a typical dicot plant.

   (d) Write short notes on the following :

      (i) Self-incompatibility

      (ii) Secondary growth in a typical dicot root.

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B.Sc. Biotechnology 1st Semester

INORGANIC CHEMISTRY-A

Paper—BT-3

Time Allowed—3 Hours] [Maximum Marks—40

Note :— The question paper shall consist of **three** parts (A, B and C) and instructions to attempt the questions are given separately for each part.

PART—A

Note :— All **eight** very short answer type questions are compulsory. Each question will be of **1** mark.

1. Name the following coordination complexes :
   (a) $[Pt(NH_3)_4(NO_2)Cl]SO_4$
   (b) $[Co(en)_2Br_2]Cl$
2. The compound $Co(NH_3)_5CO_3$. Cl has two ionization isomers. Write their structural formulae and give the IUPAC names.
3. What is the number of unpaired electrons in tetrahedral $[Ni(CO)_4]$ complex ?
4. What is hybridization and geometry of $[Ag(NH_3)_2]^+$?
5. Give the number of unpaired electrons in a strong field and weak octahedral field for
   (a) Cr^{3+} (b) Fe^{3+}
6. What is spectrochemical series ?

7. What is the relationship between bond order and bond length ?

8. Hydrogen form diatomic molecules while helium remains monoatomic, why ?

PART—B

Note :— Out of **eight** short answer type questions attempt any **five**. Each question will be of **4** marks.

9. Which type of isomeric behaviour is exhibited in the following compounds :

   (a) $[Co(NH_3)_5(NO_2)Cl_2$ and $[Co(NH_3)_5(ONO)]Cl_2$

   (b) $[Co(NH_3)_6][Cr(CN)_6]$ and $[Cr(NH_3)_6][Co(CN)_6]$

   (c) $[Co(NH_3)_5Br]SO_4$ and $[Co(NH_3)_5(SO_4)]Br$

   (d) $[Co(en)_2(H_2O)Cl]Cl_2$ and $[Co(en)_2Cl_2]Cl.H_2O$

10. Draw the geometrical isomers of complex ion: dichlorobis (ethylenediamine) cobalt(III) ion. Indicate which of these exhibits optical isomers.

11. Write down the limitations of Valence Bond Theory.

12. What do you understand by the concept back bonding ? Explain it with suitable example.

13. What is Jahn-Teller distortion effect ? Discuss the stability of Cu(II) complexes on the basis of J-T distortion.

14. Explain, how crystal field splitting occurs in octahedral complexes.

15. Write down the difference between bonding and antibonding molecular orbitals.

16. With the help of MO diagram explain why bond order of N_2^+ ion is less than that in N_2 molecule whereas bond order of O_2^+ ion is greater than O_2 molecule.

PART—C

Note :— Out of **four** descriptive type questions attempt any **two**. Each question will be of **6** marks.

17. What are the postulates of Werner's coordination theory ? Also explain the evidences which support this theory ?

18. Discuss the hybridization, geometry and number of unpaired electrons in following complexes :

   (a) $[Ni(CN)_4]^{2-}$

   (b) $[NiCl_4]^{2-}$

19. Write down all the factors which are responsible for crystal field splitting of coordination complexes ?

20. Draw the MO diagram of ML_4, a tetrahedral complex.

Exam. Code : 107401
Subject Code : 2232

B.Sc. Biotechnology 1st Semester

ORGANIC CHEMISTRY—A

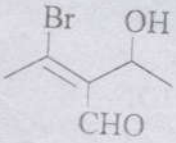
Paper—BT-4

Time Allowed—Three Hours] [Maximum Marks—40

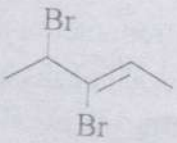
SECTION—A

Note :— Attempt **ALL** questions. Each question carries 1 mark.

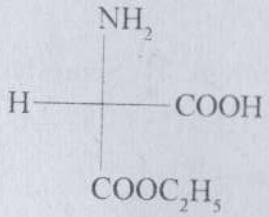
1. Write the most stable conformation of 1, 4-dihydroxy-cyclohexane.
2. Why halogenation of alkane in the presence of tetramethyllead takes place even in dark ?
3. Assign E/Z configuration to the following alkene :



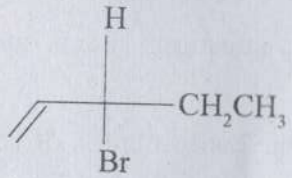
4. Assign E/Z configuration to the following alkene :



5. Assign R/S configuration to the following compound :



6. Assign R/s configuration to the following compound :



7. Vinyl chloride is less reactive than ethyl chloride towards S_N2 reaction, why ?

8. Out of 1-chloro-hexane and cyclohexyl-chloride, which one would be more reactive towards S_N2 reaction and why ?

8×1=8

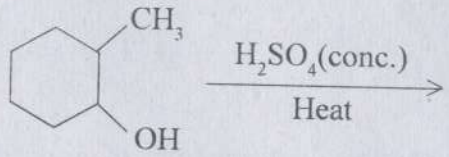
SECTION—B

Note :— Attempt any **FIVE** questions. Each question carries equal marks.

9. Justify the statement, "Bromination of alkanes is more selective than chlorination although chlorination is faster than bromination".

10. What are the various conformations of n-butane ? Discuss their relative stability using energy profile diagram.

11. Complete the following reactions and provide suitable mechanisms :

(a) 

(b) O_2N + HBr ⟶

12. Justify why trans-2-methyl-1-chlorocyclohexane reacts with alc. KOH at a much slower rate than its cis-isomer ?

13. Enlist the differences between enantiomers and diastereomers.

14. Justify the statement, "Walden inversion does not necessarily mean optical inversion".

15. How do the products differ when ethyl bromide reacts separately with aqueous KOH and alcoholic KOH ?

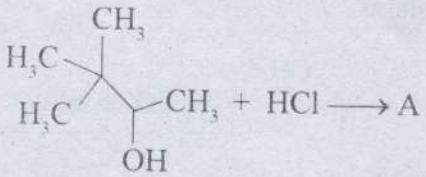
16. Write down the major differences between S_N1 and S_N2 reaction.

5×4=20

SECTION—C

Note :— Attempt any **TWO** questions. Each question carries equal marks.

17. (a) Provide the structure and suitable mechanism for the following reaction : 4

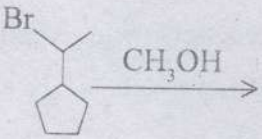


(b) Draw possible conformations of cis-1, 3-dimethyl-cyclohexane and identify the most stable conformation with suitable reason. 2

18. Taking the example of cis- and trans- but-2-ene, explain the fact that bromination of alkene is a stereospecific reaction. 6

19. Explain with examples the various methods for the resolution of a racemic mixture. 6

20. Write all the possible products along with mechanism, arising from substitution and elimination reaction of the following : 6



Exam. Code : 107401
Subject Code : 2233

B.Sc. Biotechnology I[st] Semester

COMPUTER & BIOINFORMATICS FUNDAMENTALS

Paper—BT-5

Time Allowed—3 Hours] [Maximum Marks—40

Note :—Attempt **ALL** questions from Section A, any **FIVE** questions from Section B and any **TWO** from Section C.

SECTION—A

1. Briefly differentiate between RAM and ROM.
2. Write any two secondary storage devices.
3. What do you understand by Plotter ?
4. Briefly explain the functioning of laser printer.
5. Provide any two usages of BLAST.
6. What do you understand by PDB ?
7. Briefly differentiate primary and secondary databases.
8. How do you define Bioinformatics ? 1×8=8

SECTION—B

1. Differentiate between hardware and software with suitable examples.

2. Discuss CPU and its functioning.
3. Discuss any three kinds of printers along with their functioning.
4. Write a short note on input devices.
5. Explain the significance of computers in Bioinformatics.
6. Discuss any two major bioinformatics databases.
7. Write steps to perform BLAST.
8. Write a short note on importance of sequence alignment. 4×5=20

SECTION—C

1. Discuss computer organization in detail along with block diagram.
2. Discuss any six input/output devices along with their usage.
3. Write a detailed note on BLAST.
4. Write short notes on :
   (i) DDBJ
   (ii) NCBI
   (iii) PROSITE. 6×2=12

Exam. Code : 107401
Subject Code : 2234

B.Sc. Biotechnology 1st Semester

PUNJABI COMPULSORY

Paper—BT–6 (i)

Time Allowed—3 Hours] [Maximum Marks—50

ਨੋਟ : ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਸਪਸ਼ਟ ਅਤੇ ਢੁਕਵੇਂ ਹੋਣੇ ਚਾਹੀਦੇ ਹਨ।

1. ਕਿਸੇ **ਇੱਕ** ਨਿਬੰਧ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ ਵਰਣਨ ਕਰੋ :

(i) ਨਾਰੀ ਸ਼ਕਤੀ

(ii) ਵਾਤਾਵਰਣੀ ਪ੍ਰਦੂਸ਼ਣ ਅਤੇ ਮਨੁੱਖ। 10

2. 'ਅੰਨਦਾਤਾ' ਕਵਿਤਾ ਦਾ ਸਾਰ ਲਿਖੋ। 10

3. ਕਿਸੇ **ਇੱਕ** ਵਿਸ਼ੇ 'ਤੇ ਪੈਰ੍ਹਾ ਰਚੋ :

(1) ਮਿਲਵਰਤਣ

(2) ਸਲੀਕਾ

(3) ਸ਼ੋਰ-ਪ੍ਰਦੂਸ਼ਣ। 5

4. ਹੇਠ ਲਿਖਿਆ ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪੁੱਛੇ ਗਏ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦਿਓ :

ਮਾਤ-ਭਾਸ਼ਾ ਦੀ ਸਿੱਖਿਆ ਤੋਂ ਬਗੈਰ ਕੋਈ ਵਿਦਿਆਰਥੀ ਸਿੱਖਿਆ ਦੇ ਖੇਤਰ ਵਿੱਚ ਸ਼ਿਖਰਾਂ ਨਹੀਂ ਛੂਹ ਸਕਦਾ। ਉਹ ਸਾਰੀ ਉਮਰ ਲੰਗੜਾ ਕੇ ਤੁਰਦਾ ਹੈ ਅਤੇ ਆਪਣੇ ਪੈਰਾਂ 'ਤੇ ਸਿੱਧਾ ਖੜ੍ਹਾ ਨਹੀਂ ਹੋ ਸਕਦਾ। ਮਾਤ-ਭਾਸ਼ਾ ਵਿਚਾਰਾਂ ਨੂੰ ਪ੍ਰਗਟਾਉਣ ਦਾ

ਇਕੋ-ਇਕ ਉੱਤਮ ਸਾਧਨ ਹੈ। ਇਹੋ ਕਾਰਨ ਹੈ ਕਿ ਵਿਦਵਾਨਾਂ ਨੇ ਮਾਤ-ਭਾਸ਼ਾ ਨੂੰ ਹੀ ਸਿੱਖਿਆ ਦੇਣ ਦਾ ਯੋਗ ਅਤੇ ਸਹੀ ਮਾਧਿਅਮ ਮੰਨਿਆ ਹੈ ਕਿਸੇ ਦੂਜੀ ਭਾਸ਼ਾ ਨੂੰ ਸਿੱਖਣ-ਸਿਖਾਉਣ ਵਿੱਚ ਕਾਫ਼ੀ ਸਮਾਂ ਲੱਗ ਜਾਂਦਾ ਹੈ ਜਿਹੜਾ ਕਿ ਗਿਆਨ-ਵਿਗਿਆਨ ਦੀ ਪ੍ਰਾਪਤੀ ਲਈ ਵਰਤਿਆ ਜਾ ਸਕਦਾ ਹੈ। ਸਿੱਖਿਆ ਦੇ ਖੇਤਰ ਵਿੱਚ ਜਿੰਨੇ ਵੀ ਦਾਰਸ਼ਨਿਕ ਹਨ, ਉਹਨਾਂ ਨੇ ਸਦਾ ਮਾਤ-ਭਾਸ਼ਾ ਨੂੰ ਸਿੱਖਿਆ ਦਾ ਮਾਧਿਅਮ ਬਣਾਉਣ ਉੱਤੇ ਜ਼ੋਰ ਦਿੱਤਾ ਹੈ। ਇਹ ਗੱਲ ਬੜੇ ਹੀ ਦੁੱਖ ਨਾਲ ਕਹਿਣੀ ਪੈਂਦੀ ਹੈ ਕਿ ਸਾਡੇ ਦੇਸ਼-ਵਾਸੀਆਂ ਨੂੰ ਅਜੇ ਤੱਕ ਇਸ ਦੀ ਸਮਝ ਨਹੀਂ ਆਈ ਅਸੀਂ ਅਜੇ ਤੱਕ ਵੀ ਵਿਦੇਸ਼ੀ ਭਾਸ਼ਾ ਦੇ ਮਾਧਿਅਮ ਰਾਹੀਂ ਆਪਣੇ ਬੱਚਿਆਂ ਨੂੰ ਸਿੱਖਿਆ ਦਿਵਾਉਣੀ ਚਾਹੁੰਦੇ ਹਾਂ। ਅਮੀਰ ਪਰਿਵਾਰਾਂ ਦੇ ਬੱਚੇ ਅੰਗਰੇਜ਼ੀ ਭਾਸ਼ਾ ਰਾਹੀਂ ਦਿੱਤੀ ਜਾਂਦੀ ਸਿੱਖਿਆ ਪ੍ਰਾਪਤ ਕਰਨ ਵਿੱਚ ਆਪਣੀ ਸ਼ਾਨ ਸਮਝਦੇ ਹਨ। ਸਾਨੂੰ ਇਸ ਸੰਬੰਧੀ ਗੰਭੀਰ ਵਿਚਾਰ ਕਰਨ ਦੀ ਲੋੜ ਹੈ ਅਸੀਂ ਬਹਾਨੇ ਲਾ ਰਹੇ ਹਾਂ ਕਿ ਅੰਗਰੇਜ਼ੀ ਮਾਧਿਅਮ ਹੀ ਸਾਡੇ ਲਈ ਕਲਿਆਣਕਾਰੀ ਹੈ ਪਰ ਜੇ ਥੋੜ੍ਹਾ ਗੰਭੀਰਤਾ ਨਾਲ ਵਿਚਾਰੀਏ ਤਾਂ ਸਾਨੂੰ ਆਪਣੀ ਗਲਤੀ ਦਾ ਛੇਤੀ ਹੀ ਪਤਾ ਲੱਗ ਜਾਂਦਾ।

ਪ੍ਰਸ਼ਨ :

(i) ਮਾਤ-ਭਾਸ਼ਾ ਤੋਂ ਬਿਨ੍ਹਾਂ ਬੱਚੇ ਦਾ ਕੀ ਹਾਲ ਹੁੰਦਾ ਹੈ ?

(ii) ਮਾਤ-ਭਾਸ਼ਾ ਸਿੱਖਿਆ ਦਾ ਯੋਗ ਅਤੇ ਸਹੀ ਸਾਧਨ ਕਿਉਂ ਮੰਨਿਆ ਗਿਆ ਹੈ ?

(iii) ਅਮੀਰ ਪਰਿਵਾਰਾਂ ਦੇ ਬੱਚੇ ਕੀ ਸਮਝਦੇ ਹਨ ?

(iv) ਸਿੱਖਿਆ-ਖੇਤਰ ਦੇ ਦਾਰਸ਼ਨਿਕ ਕਿਸ ਭਾਸ਼ਾ ਨੂੰ ਸਿੱਖਿਆ ਦਾ ਮਾਧਿਅਮ ਬਣਾਉਣ 'ਤੇ ਜ਼ੋਰ ਦਿੰਦੇ ਹਨ ?

(v) ਸਾਨੂੰ ਕਿਸ ਸੰਬੰਧੀ ਗੰਭੀਰ ਵਿਚਾਰ ਕਰਨ ਦੀ ਲੋੜ ਹੈ ?

5

5. ਸਵਰ-ਧੁਨੀਆਂ ਕਿਹੜੀਆਂ ਹੁੰਦੀਆਂ ਹਨ ? ਇਹਨਾਂ ਦਾ ਵਰਗੀਕਰਨ ਕਿਵੇਂ ਕੀਤਾ ਜਾਂਦਾ ਹੈ ? 10

6. (ਉ) ਮਾਤ ਭਾਸ਼ਾ ਨੂੰ ਸਿੱਖਿਆ ਦਾ ਮਾਧਿਅਮ ਬਣਾਏ ਜਾਣ ਪ੍ਰਤੀ ਆਪਣੇ ਵਿਚਾਰ ਪ੍ਰਗਟ ਕਰੋ।

ਜਾਂ

ਮਾਤ-ਭਾਸ਼ਾ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ? ਮਾਤ-ਭਾਸ਼ਾ ਦੇ ਰੂਪ ਵਿੱਚ ਪੰਜਾਬੀ ਦਾ ਮਹੱਤਵ ਦੱਸੋ।

(ਅ) ਦੂਜੀ ਭਾਸ਼ਾ ਵਜੋਂ ਮਾਤ-ਭਾਸ਼ਾ ਦੇ ਅਧਿਆਪਨ ਸਮੇਂ ਆਉਂਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਦਾ ਜ਼ਿਕਰ ਕਰੋ।

ਜਾਂ

ਮਾਤ-ਭਾਸ਼ਾ ਰਾਹੀਂ ਦਿੱਤੀ ਜਾ ਰਹੀ ਸਿੱਖਿਆ ਸੰਬੰਧੀ ਸਮੱਸਿਆਵਾਂ ਦਾ ਉਲੇਖ ਕਰਦੇ ਹੋਏ, ਉਹਨਾਂ ਨੂੰ ਹੱਲ ਕਰਨ ਦੇ ਢੰਗ ਲਿਖੋ। 5×2=10

C.No. 3, B.I-I 1-12-17 (M)

Exam. Code : 107401
Subject Code : 2235

B.Sc. Biotechnology I[st] Semester

MUDHLI PUNJABI

Paper–BT–6(ii)

Time Allowed—3 Hours] [Maximum Marks—50

ਨੋਟ : ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜ਼ਰੂਰੀ ਹਨ।

1. (ੳ) ਗੁਰਮੁੱਖੀ ਲਿੱਪੀ ਵਿੱਚ ਵਰਨਮਾਲਾ ਦੀ ਤਰਤੀਬ ਲਿਖੋ।

   (ਅ) ਗੁਰਮੁੱਖੀ ਲਿੱਪੀ ਦੀ ਵਰਨਮਾਲਾ ਵਿੱਚ ______ ਤੋਂ ______ ਤੱਕ ਸਾਰੇ ______ ਹਨ। 5+5=10

ਜਾਂ

ਪੈਰ ਵਿੱਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਨ ਕਿਹੜੇ ਹਨ ? ਉਦਾਹਰਣ ਸਹਿਤ ਲਿਖੋ। 10

2. (ੳ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿੱਚ ਜਦੋਂ ਅੱਖਰ ਦੇ ਪੈਰ ਵਿੱਚ ਅੱਧਾ ਅੱਖਰ ਲਗਦਾ ਹੈ ਤਾਂ ਉਸ ਨੂੰ ਕੀ ਕਹਿੰਦੇ ਹਨ ? ਪੈਰ ਵਿੱਚ ਪੈਣ ਵਾਲੇ ਹ ਰ ਵ ਦਾ ਉਚਾਰਨ ਲਿਖੋ।

   (ਅ) ਪੈਂਤੀ ਅੱਖਰੀ ਵਿੱਚ ਕ ਵਰਗ ਦੇ ਅੱਖਰ ਲਿਖੋ। ਇਹਨਾਂ ਦਾ ਉਚਾਰਣ ਮੂੰਹ ਦੇ ਕਿਸ ਭਾਗ ਰਾਹੀਂ ਹੁੰਦਾ ਹੈ ?

   5+5=10

3. ਟਿੱਪੀ ਕਿਸ ਨੂੰ ਕਹਿੰਦੇ ਹਨ ਦੀ ਵਿਆਖਿਆ ਕਰੋ ? ਟਿੱਪੀ ਦੀ ਵਰਤੋਂ ਵਾਲੇ ਛੇ ਸ਼ਬਦ ਲਿਖੋ। 5+5=10

4. (ੳ) ਵਿਸ਼ਰਾਮ ਚਿੰਨ ਦਾ ਅਰਥ ਸਪੱਸ਼ਟ ਕਰੋ।

(ਅ) ਹੇਠ ਲਿਖੇ ਵਿਸ਼ਰਾਮ ਚਿੰਨਾਂ ਨੂੰ ਕੀ ਕਹਿੰਦੇ ਹਨ ?

| (____)

, (____)

? (____)

! (____)

; (____)

– (____) 5+5=10

5. (ੳ) ਵਚਨ ਕਿੰਨੀ ਪ੍ਰਕਾਰ ਦੇ ਹੁੰਦੇ ਹਨ ? ਉਹਨਾਂ ਦੇ ਨਾਂ ਲਿਖੋ।

(ਅ) ਹੇਠ ਲਿਖਿਆਂ ਸ਼ਬਦਾਂ ਦੇ ਵਚਨ ਬਦਲੋ :

ਪਲੇਟ, ਇੱਟ, ਕਿਤਾਬ, ਸੱਪ, ਰੋਟੀ। 5+5=10

ਜਾਂ

(ੳ) ਨਾਂਵ ਕਿਸ ਨੂੰ ਕਹਿੰਦੇ ਹਨ ? ਇਹ ਕਿੰਨੀ ਪ੍ਰਕਾਰ ਦੇ ਹੁੰਦੇ ਹਨ ?

(ਅ) ਹੇਠ ਲਿਖੇ ਕਿਸ ਪ੍ਰਕਾਰ ਦੇ ਨਾਂਵ ਹਨ :

1. ਇਹ <u>ਕੁਰਸੀ</u> ਮੋਹਨ ਦੀ ਹੈ।
2. <u>ਕੋਹਿਨੂਰ</u> ਇੱਕ ਕੀਮਤੀ ਹੀਰਾ ਹੈ।
3. ਅੱਜ ਕੱਲ <u>ਸੋਨਾ</u> ਬਹੁਤ ਮਹਿੰਗਾ ਹੈ।
4. ਸੱਚ ਹਮੇਸ਼ਾ <u>ਕੌੜਾ</u> ਹੁੰਦਾ ਹੈ।
5. <u>ਬੱਚੇ</u> ਖੇਡ ਰਹੇ ਹਨ। 5+5=10

Exam. Code : 107401
Subject Code : 2236

B.Sc. Biotechnology 1st Semester

BT-7 : COMMUNICATION SKILLS IN ENGLISH

Time Allowed—3 Hours] [Maximum Marks—50

Note :– All questions are compulsory.

I. Read the passage carefully and answer the questions by selecting the appropriate options :

The development of the horse has been recorded from the beginning through all of its evolutionary stages to the modern form. It is, in fact, one of the most complete and well-documented chapters in paleontological history. Fossil finds provide us not only with detailed information about the horse itself, but also with valuable insights into the migration of herds and even evidence for speculation about the climatic conditions that could have instigated such migratory behaviour.

It has been documented that almost twelve million years ago at the beginning of the Pliocene Age, a horse, about midway through its evolutionary development, crossed a land bridge where the Bering Straits are now located, from Alaska into the grasslands of Europe. The horse

was the hipparion, about the size of a modern-day pony with three toes and specialized cheek teeth for grazing. In Europe the hipparion encountered another less advanced horse called the anchitheres, which had previously invaded Europe by the same route, probably during the Miocene Period. Less developed and smaller than the hipparion, the anchitheres was completely replaced by it. By the end of the Pleistocene Age both the anchitheres and the hipparion had become extinct in North America, where they had originated. In Europe they had evolved into an animal very similar to the horse as we know it today. It was the descendant of this horse that was brought by the European colonists to the Americas.

(1) What is this passage mainly about ?

(a) the evolution of the horse

(b) the migration of horses

(c) the modern-day pony

(d) the replacement of the anchitheres by the hipparion

(2) According to the author, fossils are considered valuable for all of the following reasons EXCEPT :

(a) they suggest how the climate may have been

(b) they provide information about migration

(c) they document the evolution of the horse

(d) they maintain a record of life prior to the Miocene Age

(3) Which of the following conclusions may be made on the basis of information in the passage ?

(a) the hipparions migrated to Europe to feed in developing grasslands

(b) there are no fossil remains of either the anchitheres or the hipparion

(c) there were horses in North America when the first European colonists arrived

(d) very little is known about the evolution of the horse

(4) According to this passage, the hipparions were :

(a) five-toed animals

(b) not as highly developed as the anchitheres

(c) larger than the anchitheres

(d) about the size of a small dog

(5) The word "it" in line 21 refers to :

(a) anchitheres

(b) hipparion

(c) Miocene Period

(d) route 5×2=10

II. Read the following passage and answer the questions that follow :

In every country people imagine that they are the best and the cleverest and the others are not as good as they are. The Englishman thinks that he and his country

are the best, the Frenchman is very proud of France and everything French. The Germans and Italians think no less of their countries and many Indians imagine that India is in many ways the greatest country in the world. This is wrong. Everybody wants to think well of himself and his country. But really there is no country which is not partly good and partly bad. We are, of course, most concerned with our own country, India. Unhappily, it is in a bad way today. Most of our people are poor and unhappy. They have no joy in their lives. We have to find out how we can make them happier. We have to see what is good in our ways and customs, and try to keep it, and whatever is bad we have to throw away. If we find anything good in other countries, we should certainly take it.

Questions :

(1) What do the people of every country imagine and how far is it correct ?

(2) People from how many countries are mentioned in the paragraph ?

(3) Would you say that the writer is an open-minded person ?

(4) Do you generally agree with his views ?

5×2=10

III. Write a letter to your uncle requesting him to bring an I-pad for you from Australia. Explain why you need it and how you would make use of it.

OR

You have received from your suppliers some paper in a damaged condition. Write to them a letter of complaint emphasising the need of greater care in filling the orders. 10

IV. Write a public notice informing about the merger of the companies – Modi Xerox Financial Services Limited and Xerox Modicorp Limited.

OR

On the basis of your reading of the passage make notes on it, in points only, using headings and sub-headings in the suitable format.

Buying your first bike is one of the most exciting things you will ever do. It's also one of the most worrying ! Buy the wrong bike and all your hard-earned savings will disappear. Buying a bike needs a lot of care !

The first thing to decide is whether you are going to buy a bike from a motorcycle dealer or straight from the owner. There are good points about both ways – and there are problems too.

Bikes are advertised privately in the local newspapers

and also in the motorcycle press. Because everyone who advertises a bike wants to sell it, the advertisements will make the bike sound as good as possible. Few people will tell actual lies but they might not tell the whole truth either. For example, someone might say in their advertisement that their bike is, "an excellent runner"– which means that the motor is in good condition. But they won't tell you that the bike needs new tyres or that the brakes are worn out. You will have to find that out for yourself. It would take a saint to tell you all the things which would make you not want to buy his machine–and not many saints ride bikes !

When you buy a bike from the owner, the responsibility for deciding its condition is entirely up to you. This means that you must really understand bikes, or have someone with you who is an expert, to be sure that the machine you are buying is a good one. The person selling the bike will probably give you a receipt which says, "Sold as seen and approved." This means that if you find anything wrong with the bike when you get it home, then it's tough luck. You have bought the bike and no matter what is wrong with it, you're stuck with it !

But there are advantages in buying a bike straight from the owner. If you understand exactly what you are doing, or have got someone with you who really knows

bikes, you can often get a real bargain. A person selling a bike privately does not have to make a profit, like a dealer, so he will usually ask less for his bike. Some people need money quickly, or get fed up with their bike and want a new one, and they will often sell their bikes cheap too.

So what do you look for when you are buying a bike ? You really need to be an expert to be sure of what you are doing but even someone who has just started riding can get quite a good idea of what the bike is like– but you must take time to think about what you are doing.

The first thing to do is just to look at the bike and ask yourself, "Does this bike look as if it has been cared for ? Does it look scruffy or has it been cleaned and looked after ?" The appearance of the bike will tell you a lot about its owner.

Now, let's think about some of the more definite things to look for. If you follow these rules, you will at least look as if you are an expert and perhaps the seller will tell you things about the bike he would not normally have mentioned.

First, look at the wheels. Are the tyres bald or nearly worn out ? If they are, they will be expensive to replace. Are the spokes loose ? Does the wheel rim have any deep marks in it where it might have been damaged in an accident ?

You can also tell whether a bike has been in an accident by looking at the indicators, the clutch and brake levers and the footrests. If any of these have been damaged, then the bike will have at least fallen over but it might also have been in an accident. If it has been crashed, then there is a good chance that the frame and suspension will have been weakened too. You don't want to be riding a bike which has been damaged like this.

The bike's owner will not let you ride the bike but you can check that all the gears are working by changing gear with the engine stopped and the bike on its centre-stand. Get a friend to move the back wheel a little bit between each gear change to let the gears engage. Go from first to fifth gear and then back again, counting the number of gear changes. Don't forget to find neutral, which comes between first and second gear.

Ask the seller to start the bike. It should start easily and the engine should run quietly. If it won't start for him,

you can bet your last penny it won't start for you, so stay away from it ! The engine should be quiet. If there are any funny noises coming from the engine, leave it alone. All bikes should be quiet and if the exhaust is noisy it will need replacing. Only idiots run bikes with noisy exhausts because unless the silencer is working properly, the engine can easily be damaged. Noisy exhausts are illegal too !

Next, check that the suspension is working smoothly by putting the front brake on and gently bouncing the bike up and down. The front forks should move smoothly, without any stiffness or clanking noises. Carefully bounce on the saddle to check the rear suspension. Always be careful and gentle when looking at someone else's bike or they might bounce up and down on you !

Check that all the electrical gear is working properly. The lights should work on main beam and dip and the horn should be clear. Put your hand over the headlamp when the engine is running and then switch on the lights. If they go much brighter as the engine is revved up, then the battery is probably in poor condition. New batteries are not very expensive but there could also be problems with the bike's generator and these can cost a fortune to repair. All these things will affect how much you pay for the bike.

You don't have to pay the price the seller puts in the advertisement. Without being bad-mannered, you can point out the things which are wrong with the bike and ask him to reduce the price of the machine. If he won't then you can look at another bike. It's as simple as that.

You can do just the same thing when you buy a bike from a dealer. The only difference–and it is a big one–is that the dealer will have to tell you the truth about the bike. If he says the engine is in good condition, it has to be in good condition–by law. All dealers have to sell bikes which are of merchantable quality. This means that they have to do the job they are sold for. If you buy a bike from a dealer and when you take it home, you find something terribly wrong, then the dealer will have to repair the fault or give you back your money.

But the law is not the main reason a dealer will want to keep you happy. Unlike a private seller, the dealer wants you to come back and buy bikes from him again and again. Another reason for going to a dealer is that most of the people in the motorcycle business love bikes. They will want you to have a bike which will be safe and give you a lot of pleasure so that you will become a biker like them 10

V. Do as directed :

(1) Put the verb into the correct form, present simple or past simple, active or passive :

(i) The company is not independent. It ____ (own) by a much larger company.

(ii) I was born in London but I ____ (grow up) in Canada.

(iii) Water ____ (cover) most of the earth's surface.

(2) Change the narration :

(iv) "I went to Bangalore", he said.

(v) Geeta says, "I will become a dancer."

(3) Put the verb into the correct form, past continuous or past simple.

(vi) We were in a very difficult position. We ____ (not/know) what to do.

(vii) How fast ____ (you/drive) when the accident ____ (happen) ?

(viii) When I was young, I _____ to be a pilot.

(4) Complete the sentences with *say* or *tell* (in the correct form) :

(ix) _____ us about your holiday. Did you have a nice time ?

(x) Don't ____ anybody what I ____. It's a secret just between us. 10

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Exam. Code : 107401

Subject Code : 2237

B.Sc. Biotechnology Ist Semester

GENERAL MICROBIOLOGY—A

Paper—BT-8

Time Allowed—3 Hours] [Maximum Marks—40

Note :– Answer **ALL** questions from Section A, any **five** questions from Section B and any **two** questions from Section C.

SECTION—A

1. Discuss the following briefly : 8×1

   (a) Resolution of microscope

   (b) Facilitated diffusion

   (c) Temperate virus

   (d) Appresoria

   (e) LPS

   (f) Mordant

   (g) Phylogeny

   (h) Catalase test.

SECTION—B

2. Write short notes on the following (any **five**) : 4×5

   (a) Immunofluorescence microscopy.

   (b) Nutrional forms of bacteria.

   (c) Types of asexual spores in fungi.

   (d) Culture collection center.

   (e) The structure and function of peptidoglygan.

   (f) Spore staining.

   (g) DNA-DNA hybridization.

   (h) Numerical taxonomy.

SECTION—C

3. Discuss the various transport mechanisms used by bacteria for nutrient uptake. 6

4. Discuss in detail some of the salient features, method of sexual reproduction of Ascomycetes and Zygomycetes groups of fungi. 6

5. Discuss the different types of flagella. Also discuss the structures of flagella in Gram-positive and Gram-negative bacteria. 6

6. Explain in detail the basic characteristics of the family Enterobacteriaceae. What are the important tests used to identify the bacteria belonging to Enterobacteriaceae ? 6

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B.Sc. Biotechnology I[st] Semester

BIOCHEMISTRY—I

Paper—BT-9

Time Allowed—3 Hours] [Maximum Marks—40

Note :—(1) Attempt **ALL** parts from Section A. Each question carries **1** mark.

(2) Attempt any **FIVE** questions from Section B. Each question carries **4** marks.

(3) Attempt any **TWO** questions from Section-C. Each question carries **6** marks.

SECTION—A

1. (i) Structure of water molecule.

(ii) Buffer.

(iii) Mutarotation.

(iv) Chemically modified carbohydrates.

(v) Saponification.

(vi) Gangliosides.

(vii) t-RNA.

(viii) Hyperchromicity.

SECTION—B

2. Discuss the physiochemical properties of water.
3. Dissociation and association constant.
4. Concept of reducing and non-reducing sugar.
5. Monosaccharides.
6. Lipopolysaccharides.
7. Glycolipids.
8. Features of different types of NDA.
9. Watson-Crick model of DNA.

SECTION—C

10. Discuss Hasselbach Hendersson equation and its implications.
11. Discuss the role of stereochemistry carbohydrate biology.
12. What are Glycoproteins ? Mention their applications.
13. Write down the structural features of major species of RNA.

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Exam. Code : 107401
Subject Code : 2239

B.Sc. (Biotechnology) 1st Semester

DRUG ABUSE : PROBLEM, MANAGEMENT & PREVENTION

Time Allowed—3 Hours] [Maximum Marks—50

SECTION—A

Note :— Section A will consist of **five** short answer type questions. Candidates will be required to attempt **three** questions. Each question carrying **5** marks. Answer to any of the question should not exceed **two** pages. 3×5=15

1. Discuss the conditions of physical dependence of Drug Abuse.
2. Is there any difference between Drug Habituation and Drug Addiction ? Discuss.
3. What are Depressants ? Briefly discuss its three types.
4. Write a short note on Steroids.
5. Briefly discuss the prevalence of Menace of Drug Abuse in Punjab.

SECTION—B

Note :— This section consists of **four** essay type questions. Candidates will be required to attempt **two** questions. Each question carries **10** marks. Answer to any of the questions should not exceed **four** pages. 2×10=20

1. Define Drug Abuse. Discuss historical perspective of Drug Abuse.

2. What do you mean by Drug Dependence ? What are its withdrawal symptoms ?

3. What are Stimulants ? Discuss its types and effects.

4. Discuss signs and symptoms of Drug Abuse.

SECTION—C

Note :— This section consists of **two** questions. Candidates will be required to attempt **one** question. Each question carries **15** marks. Answer to the questions should not exceed **5** pages. 1×15=15

1. What do you mean by Narcotics ? Discuss its types and its effects and withdrawal syndrous.

2. How does Drug Abuse affect its buyers physically, academically, behaviourally and psychologically ?