Exam. Code : 107402
Subject Code : 2270

B.Sc. (Bio Technology) 2nd Semester

ZOOLOGY—B

Paper—BT–1

Time Allowed—3 Hours] [Maximum Marks—40

Note :— All questions of Section A are compulsory. Attempt any **FIVE** questions from Section B and **TWO** questions from Section C.

SECTION—A

1. Give short answers. Each question carries 1 mark.
   (a) Write the function of thyrotropin.
   (b) What helps to regulate the level of blood calcium ?
   (c) Define osmoregulation.
   (d) What is the role of corpus luteum ?
   (e) Draw a well labeled diagram of mammalian eye.
   (f) What are proprioceptors ?
   (g) Name the proteins associated with actin filaments.
   (h) What is the function of cerebellum ? 8×1=8

SECTION—B

2. Write a note on islets of Langerhans. 4
3. Give an account of evolution of urogenital ducts in males. 4
4. How do mammals maintain water balance ? 4

5. Explain the structure of hind brain. 4

6. How are action potentials conducted along the axon ? 4

7. Write a note on adrenal medulla. 4

8. Explain the role of calcium in controlling actin myosin interactions. 4

9. Discuss the various types of jaw suspensions. 4

SECTION—C

10. Explain the structure and function of anterior pituitary. 6

11. Describe the structure of skeletal muscles. What is the mechanism of muscle contraction ? 6

12. Explain the synaptic transmission of nerve impulse with the help of a diagram. 6

13. Discuss the structure and function of mammalian kidney giving a well labeled diagram. 6

Exam. Code : 107402
Subject Code : 2271

B.Sc. (Bio-Technology) 2nd Semester

BOTANY—B

Paper—BT-2

Time Allowed—Three Hours] [Maximum Marks—40

Note :— Attempt **ALL** the questions from Section A, **FIVE** questions from Section B and **TWO** questions from Section C. Draw neatly labelled diagrams wherever required. Marks for each question are indicated in the paper.

SECTION—A

1. Write about a paragraph (upto **1/3** of a page) on each of the following :— 1×8=8

   (i) Bryophytes with examples

   (ii) Gynoecium

   (iii) Silicula

   (iv) Breeder seed

   (v) Grain and seed

   (vi) Zygomorphic

   (vii) Lemma and glumes

   (viii) Species.

SECTION—B

Note :— Attempt **FIVE** of the following questions, each in about **2** pages of the answer book. 4×5=20

2. Write salient features of Bentham and Hooker system of classification.
3. Explain morphological features of *Helianthus*.
4. Write general characters of family Leguminosae.
5. Define seed biology. Explain different methods of seed production.
6. Explain reproductive characters of Lichens.
7. Discuss evolutionary status of family Compositae.
8. Discuss vegetative structure of *Ranunculus*.
9. Explain different classes of seeds.

SECTION—C

Note :— Attempt **TWO** questions from this section, limiting your answer to about **5** pages. 6×2=12

10. Differentiate between Natural and Artificial systems of classification.
11. Explain general characters of family Apiaceae with reference to genus *Coriandrum sativum L.*
12. Discuss general characters of genus *Acacia* of family Leguminosae.
13. Explain process and requirement of seed certification.

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Subject Code : 2272

B.Sc. (Bio-Technology) 2nd Semester

INORGANIC CHEMISTRY—B

Paper—BT-3

Time Allowed—Three Hours] [Maximum Marks—40

SECTION—A

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

1. Give two examples of metal carbonyls which undergo dimerisation in order to obey 18-electron rule.
2. N_2 is isoelectronic with CO, but it is poor σ-donor than CO. Give suitable reason.
3. Draw the structure of [18] crown-6 and cryptand [3.3.3].
4. What do you understand by macrocyclic ligand ? Give one example.
5. What do you understand by thermodynamic stability of a complex ?
6. Draw the structure of porphyrin.
7. What is Hill constant ? Give its significance.
8. Write chemical equations involved in photosynthesis.

SECTION—B

Note :— Attempt any **FIVE** questions. Each question carries **4** marks.

1. What are metal carbonyls ? Also discuss bonding in linear M-CO group in metal carbonyls.
2. How will you prepare $Fe(CO)_5$? Write the possible products obtained when $Fe(CO)_5$ reacts with :
   (i) OH^-, (ii) C_5H_6 and (iii) PPh_3.
3. What do you understand by phase transfer catalysis ? Also discuss its applications.
4. Define cryptands. Give two examples. Also give two methods to prepare cryptands.
5. Chelation increases the stability of the complex. Explain with suitable examples.
6. Derive relationship between stepwise and cumulative stability constants.
7. Briefly describe the role of zinc containing enzymes in the biological systems.
8. Discuss the role of following metals in the biological systems :
   (a) Calcium
   (b) Chromium
   (c) Magnesium
   (d) Cobalt.

SECTION—C

Note :— Attempt any **TWO** questions. Each question carries **6** marks.

1. Write brief notes on :—
   (a) Metal complexes containing dinitrogen as ligands. 3
   (b) Metal carbonyl hydrides. 3
2. Discuss in detail various types of cation-binding hosts with two examples each. Also briefly describe various interactions responsible for binding of host molecules and metal ions.
3. (a) What is the difference between the terms kinetic stability and thermodynamic stability ? 3
   (b) How does the nature of ligands affect the stability of complex ? 3
4. Draw and discuss the structure of hemoglobin. Describe the important role of hemoglobin in biological systems.

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Subject Code : 2273

B.Sc. (Biotechnology) 2nd Semester

ORGANIC CHEMISTRY—B

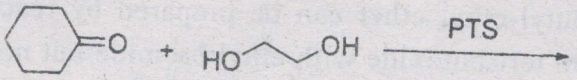
Paper—BT-4

Time Allowed—Three Hours] [Maximum Marks—40

SECTION—A

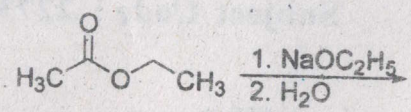
Note :— Attempt **ALL** the questions. All questions carry equal marks.

1. Although acetylene is acidic in nature, yet it doesn't react with NaOH, why ?
2. How will you convert ethyne to acetaldehyde?
3. Using Williamson's synthesis, how will you synthesize cyclohexylmethyl ether ?
4. Write a short note on crown ether.
5. Aldehydes undergo nucleophilic addition reactions more easily than ketones, explain.
6. Complete the following reaction :



7. Benzoyl chloride gets hydrolyzed at a much slower rate than acetyl chloride, why ?

8. Complete the following reaction :

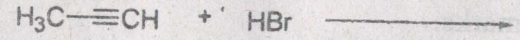


1×8=8

SECTION—B

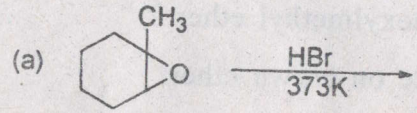
Note :— Attempt any **FIVE** questions. Each question carries equal marks.

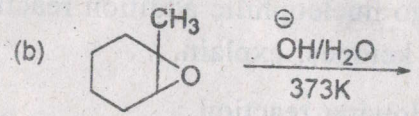
9. Provide the structure and mechanism of following reaction :



10. Alkynes are less reactive than alkenes towards electrophilic addition reactions. Explain.

11. Predict the products in the following reactions with a suitable mechanism :





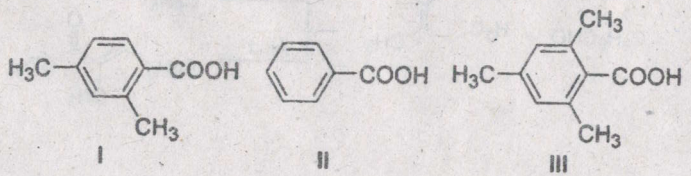
12. Tert-butyl-ethyl ether can be prepared by reacting sodium tert-butoxide with ethyl bromide but not by reacting tert-butyl bromide with sodium ethoxide. Why?

13. Explain why in acid catalyzed halogenations of 2-butanone, halogenation preferentially occurs at methylene rather than methyl group ?

14. How would you prepare 2-methyl-2-pentene using Wittig reaction ?

15. Discuss Hofmann bromamide reaction with a suitable mechanism.

16. Arrange the following in decreasing order of acid catalyzed esterification and provide a suitable reason :



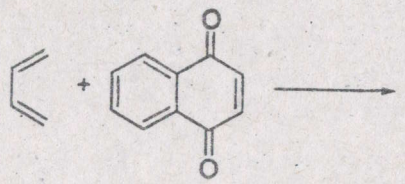
5×4=20

SECTION—C

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

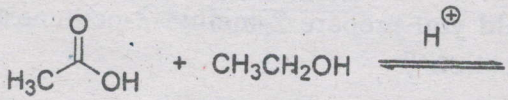
17. (a) With mechanism, how will you convert but-2-yne to but-2-ene in the presence of $Na/liq.NH_3$? 4

(b) Complete the following reaction :



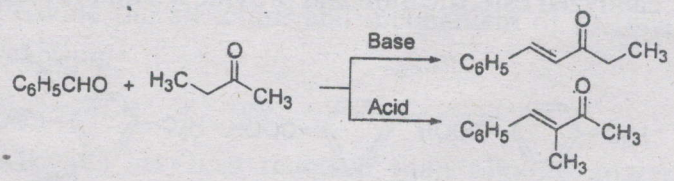
2

18. Provide the structure of product along with a suitable mechanism for the following reaction :



6

19. How do you explain the outcome of following reaction in acidic and basic media :



6

20. With mechanism, state and explain Dieckmann condensation reaction. 6

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B.Sc. (Bio-Technology) 2nd Semester

INORGANIC CHEMISTRY—B

Paper—BT-3

Time Allowed—Three Hours] [Maximum Marks—40

SECTION—A

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

1. Give two examples of metal carbonyls which undergo dimerisation in order to obey 18-electron rule.
2. N_2 is isoelectronic with CO, but it is poor σ-donor than CO. Give suitable reason.
3. Draw the structure of [18] crown-6 and cryptand [3.3.3].
4. What do you understand by macrocyclic ligand ? Give one example.
5. What do you understand by thermodynamic stability of a complex ?
6. Draw the structure of porphyrin.
7. What is Hill constant ? Give its significance.
8. Write chemical equations involved in photosynthesis.

SECTION—B

Note :— Attempt any **FIVE** questions. Each question carries **4** marks.

1. What are metal carbonyls ? Also discuss bonding in linear M-CO group in metal carbonyls.
2. How will you prepare $Fe(CO)_5$? Write the possible products obtained when $Fe(CO)_5$ reacts with :
   (i) OH^-, (ii) C_5H_6 and (iii) PPh_3.
3. What do you understand by phase transfer catalysis ? Also discuss its applications.
4. Define cryptands. Give two examples. Also give two methods to prepare cryptands.
5. Chelation increases the stability of the complex. Explain with suitable examples.
6. Derive relationship between stepwise and cumulative stability constants.
7. Briefly describe the role of zinc containing enzymes in the biological systems.
8. Discuss the role of following metals in the biological systems :
   (a) Calcium
   (b) Chromium
   (c) Magnesium
   (d) Cobalt.

SECTION—C

Note :— Attempt any **TWO** questions. Each question carries **6** marks.

1. Write brief notes on :—
   (a) Metal complexes containing dinitrogen as ligands. 3
   (b) Metal carbonyl hydrides. 3
2. Discuss in detail various types of cation-binding hosts with two examples each. Also briefly describe various interactions responsible for binding of host molecules and metal ions.
3. (a) What is the difference between the terms kinetic stability and thermodynamic stability ? 3
   (b) How does the nature of ligands affect the stability of complex ? 3
4. Draw and discuss the structure of hemoglobin. Describe the important role of hemoglobin in biological systems.

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B.Sc. (Bio Technology) 2nd Semester

BIOSTATISTICS

Paper – BT-5

Time Allowed—3 Hours] [Maximum Marks—40

Attempt as per directions.

SECTION–A

Note :– All questions are compulsory. 1×8=8

1. Define and explain the following :

   (i) Mean

   (ii) Mode

   (iii) Probability

   (iv) Samples

   (v) Correlation

   (vi) Regression

   (vii) Null hypothesis

   (viii) Attributes.

SECTION–B

Note :– Attempt any **five** questions. 5×4=20

2. Find out the standard deviation of a sample 16, 13, 17 and 22.

3. What is covariance ? How will you determine it ?

4. What is conditional probability ? How will you determine it ?

5. What is Bayes theorem ? Explain.

6. What is linear correlation ? Explain.

7. What is linear regression ? Explain.

8. What is goodness of fit ? Explain.

9. What is association of attributes ? Explain.

SECTION–C

Note :– Attempt any **two** questions. 6×2=12

10. Find the standard deviation of incubation period of small pox in 50 patients of the following data :

Period	10	11	12	13	14	15	16
No. of Patients	2	7	11	15	10	4	1

11. What is the probability of getting at most 8 heads in 10 coins tossed together ?

12. Calculate the correlation coefficient between x and y from the following data :

x	5	9	13	17	21
y	12	20	25	33	35

13. From the table given below whether the color of son's eyes are associated with that of father's eyes ?

		Eyes colour of sons	
		Not Light	Light
Eyes colour of fathers	Not Light	230	148
	Light	151	471

($\psi^2_{0.05}$, d.f. 1 = 3.84)

Exam. Code : 107402
Subject Code : 2275

B.Sc. (Bio-Technology) 2nd Semester

PUNJABI COMPULSORY

Paper : BT–6 (i)

Time Allowed—3 Hours] [Maximum Marks—50

ਨੋਟ :- ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹਨ।

1. ਹੇਠ ਲਿਖੇ ਨਿਬੰਧਾਂ ਵਿਚੋਂ ਕਿਸੇ **ਇੱਕ** ਨਿਬੰਧ ਦਾ ਸਾਰ ਆਪਣੇ ਸ਼ਬਦਾਂ ਵਿੱਚ ਲਿਖੋ :
   (ੳ) ਕੰਪਿਊਟਰ
   (ਅ) ਮਨੁੱਖੀ ਅਧਿਕਾਰ। 10
2. ਵਰਿਆਮ ਸਿੰਘ ਰਚਿਤ ਕਹਾਣੀ 'ਦਲਦਲ' ਵਿੱਚ ਪੇਸ਼ ਵਿਸ਼ੇ ਵਸਤੂ ਨੂੰ ਬਿਆਨ ਕਰੋ। 10
3. ਪੜਨਾਂਵ ਸ਼੍ਰੇਣੀ ਬਾਰੇ ਵਿਸਥਾਰ-ਪੂਰਵਕ ਜਾਣਕਾਰੀ ਦਿਓ। 10
4. ਹੇਠ ਲਿਖੇ ਵਿਸ਼ਿਆਂ ਵਿੱਚੋਂ ਕਿਸੇ **ਇੱਕ** ਵਿਸ਼ੇ ਤੇ ਪੈਰਾ ਰਚੋ :
   (ੳ) ਅਨਪੜ੍ਹਤਾ
   (ਅ) ਅਜੋਕੀ ਵਿਦਿਅਕ ਪ੍ਰਣਾਲੀ
   (ੲ) ਪ੍ਰਦੂਸ਼ਣ ਦੀ ਸਮੱਸਿਆ। 5
5. ਹੇਠ ਲਿਖਿਆ ਪੈਰਾ ਪੜ੍ਹ ਕੇ ਅੰਤ ਵਿੱਚ ਦਿੱਤੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਲਿਖੋ :

ਗੁਰੂ ਜੀ ਬੜੀ ਸੋਚ ਵਿਚਾਰ ਪਿੱਛੇ ਇਸ ਸਿੱਟੇ ਤੇ ਪੁੱਜੇ ਕਿ ਤਾਲੀਮ ਹਾਸਿਲ ਕਰਨ ਦਾ ਸ਼ੌਕ ਸਿੱਖਾਂ ਵਿੱਚ ਆਮ ਹੋਣਾ ਚਾਹੀਦਾ ਹੈ। ਉਹ ਆਪ ਹਿੰਦੀ, ਸੰਸਕ੍ਰਿਤ, ਫਾਰਸੀ, ਅਰਬੀ ਤੇ ਪੰਜਾਬੀ ਦੇ ਉਚ ਵਿਦਵਾਨ ਸਨ। ਉਹਨਾਂ ਨੇ ਕਵੀ ਦਰਬਾਰਾਂ ਦਾ ਰਿਵਾਜ਼ ਇਸ ਲਈ ਚਲਾਇਆ ਕਿ ਲੋਕਾਂ ਨੂੰ ਵਿਦਿਆ ਦਾ ਸ਼ੌਕ ਪੈਦਾ

ਹੋ ਜਾਵੇ। ਇਹਨਾਂ ਦਰਬਾਰਾਂ ਵਿੱਚ ਬੜੇ ਉੱਚ ਕੋਟੀ ਦੇ ਸ਼ਾਇਰ ਇਕੱਠੇ ਹੁੰਦੇ ਸਨ। ਕਵਿਤਾ ਅਤੇ ਲੇਖਣੀ ਦੇ ਮੁਕਾਬਲੇ ਹੁੰਦੇ। ਜਿਹੜੇ ਪਹਿਲੇ ਨੰਬਰਾਂ ਤੇ ਰਹਿੰਦੇ ਉਹਨਾਂ ਨੂੰ ਗੁਰੂ ਦਰਬਾਰ ਤੋਂ ਸਿਰੋਪਉ ਤੇ ਇਨਾਮ ਮਿਲਦਾ। ਗੁਰੂ ਜੀ ਨੇ ਆਪ ਆਪਣੇ ਜੀਵਨ ਦੇ ਕੁਝ ਸਾਲ ਖਾਲਸਾ ਪੰਥ ਸਜਾਉਣ ਤੋਂ ਪਹਿਲਾਂ ਇਕਾਂਤ ਵਿੱਚ ਪਹਾੜੀ ਟਿੱਲੇ ਤੇ ਗੁਜ਼ਾਰੇ ਸਨ। ਇਸ ਸਮੇਂ ਆਪ ਨੇ ਕਈ ਰਚਨਾਵਾਂ ਰਚੀਆਂ ਅਤੇ ਹਿੰਦੀ, ਸੰਸਕ੍ਰਿਤ ਆਦਿ ਗ੍ਰੰਥਾਂ ਦੇ ਤਰਜ਼ਮੇ ਕਰਵਾਏ। ਅਫਸੋਸ ਇਹ ਕਿ ਇਹ ਭਰੀ ਵਿਦਿਆ ਦਾ ਖਜ਼ਾਨਾ ਅਨੰਦਪੁਰ ਦੀ ਲੜਾਈ ਮਗਰੋਂ ਸਰਸਾ ਨਦੀ ਦੀ ਭੇਂਟ ਹੋ ਗਿਆ।

ਪ੍ਰਸ਼ਨ :

1. ਸੋਚ ਵਿਚਾਰ ਪਿੱਛੋਂ ਗੁਰੂ ਜੀ ਕਿਸ ਸਿੱਟੇ ਤੇ ਪੁੱਜੇ ?
2. ਗੁਰੂ ਜੀ ਕਿਹੜੀ-ਕਿਹੜੀ ਭਾਸ਼ਾ ਦੇ ਵਿਦਵਾਨ ਸਨ ?
3. ਕਵੀ ਦਰਬਾਰ ਕਿਹੜੇ ਉਦੇਸ਼ ਨਾਲ ਸ਼ੁਰੂ ਕੀਤੇ ਗਏ ?
4. ਕਵੀਆਂ ਨੂੰ ਉਤਸ਼ਾਹਿਤ ਕਰਨ ਲਈ ਕੀ ਕੁਝ ਕੀਤਾ ਜਾਂਦਾ ਸੀ ?
5. ਵਿਦਿਆ ਦਾ ਕਿਹੜਾ ਖਜ਼ਾਨਾ ਸਰਸਾ ਨਦੀ ਵਿੱਚ ਤਬਾਹ ਹੋ ਗਿਆ ? 5

6. ਹੇਠ ਲਿਖੇ ਮੁਹਾਵਰਿਆਂ ਅਤੇ ਅਖਾਣਾਂ ਵਿੱਚੋਂ **ਪੰਜ** ਮੁਹਾਵਰੇ ਅਤੇ **ਪੰਜ** ਅਖਾਣਾਂ ਨੂੰ ਵਾਕਾਂ ਵਿੱਚ ਇਸ ਤਰ੍ਹਾਂ ਵਰਤੋ ਕਿ ਇਹਨਾਂ ਦੇ ਅਰਥ ਸਪੱਸ਼ਟ ਹੋ ਜਾਣ :

(ੳ) ਅੱਖਾਂ ਵਿੱਚ ਰੜਕਣਾ, ਕੰਨਾਂ ਦਾ ਕੱਚਾ ਹੋਣਾ, ਛਿੱਲ ਲਾਹੁਣਾ, ਸੱਤੀਂ ਕੱਪੜੀ ਅੱਗ ਲੱਗਣਾ, ਨੱਕ ਨਾਲ ਚਣੇ ਚਬਾਉਣਾ, ਲਾਲ ਪੀਲਾ ਹੋਣਾ, ਸੁੰਨ ਰਹਿ ਜਾਣਾ।

(ਅ) ਆਪੇ ਮੈਂ ਰੱਜੀ ਪੁੱਜੀ ਆਪੇ ਮੇਰੇ ਬੱਚੇ ਜੀਣ, ਵੇਲੇ ਦੀ ਨਮਾਜ਼ ਕੁਵੇਲੇ ਦੀਆਂ ਟੱਕਰਾਂ, ਘਰ ਦਾ ਜੋਗੀ ਜੋਗੜਾ ਬਾਹਰ ਦਾ ਜੋਗੀ ਸਿੱਧ, ਛੱਜ ਤਾਂ ਬੋਲੇ ਛਾਣਨੀ ਕੀ ਬੋਲੇ, ਟਾਟ ਦੀ ਜੁੱਲੀ ਰੇਸ਼ਮ ਦਾ ਬਖੀਲਾ, ਸੱਦੀ ਨਾ ਬੁਲਾਈ ਮੈਂ ਲਾੜੇ ਦੀ ਤਾਈ, ਢਿੱਡ ਭਰਿਆ ਕੰਮ ਸਰਿਆ। 5+5=10

Exam. Code : 107402
Subject Code : 2276

B.Sc. (Bio Technology) 2nd Semester

ਮੁੱਢਲੀ ਪੰਜਾਬੀ

Paper : BT–6 (ii)

Time Allowed—3 Hours] [Maximum Marks—50

ਨੋਟ :- ਸਾਰੇ ਸਵਾਲ ਕਰਨੇ ਜ਼ਰੂਰੀ ਹਨ।

1. (ੳ) ਸਮਾਸੀ ਸ਼ਬਦ ਕੀ ਹੁੰਦੇ ਹਨ ? ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿੱਚ ਵਰਤੇ ਜਾਂਦੇ ਕੋਈ **ਪੰਜ** ਸਮਾਸੀ ਸ਼ਬਦ ਲਿਖੋ। 5

(ਅ) ਅਗੇਤਰ ਕੀ ਹੁੰਦੇ ਹਨ ? ਹੇਠ ਲਿਖੇ ਅਗੇਤਰਾਂ ਦੀ ਵਰਤੋਂ ਕਰਕੇ ਮਿਸ਼ਰਤ ਸ਼ਬਦਾਂ ਦੀ ਰਚਨਾ ਕਰੋ :

ਅਣ, ਦੁਰ, ਪਰ, ਅਪ, ਗੈਰ 5

(ਇ) ਪਿਛੇਤਰ ਕੀ ਹੁੰਦੇ ਹਨ ? ਹੇਠ ਲਿਖੇ ਪਿਛੇਤਰਾਂ ਦੀ ਵਰਤੋਂ ਕਰਕੇ ਮਿਸ਼ਰਤ ਸ਼ਬਦਾਂ ਦੀ ਰਚਨਾ ਕਰੋ :

ਹੀਣ, ਖ਼ਾਨਾ, ਦਾਨ, ਮੰਦ, ਸ਼ਾਲਾ 5

(ਸ) (i) ਪੰਜਾਬ ਦੀਆਂ ਰੁਤਾਂ ਦੇ ਨਾਮ ਲਿਖੋ।

(ii) ਬਾਰ੍ਹਾਂ ਮਹੀਨਿਆਂ ਦੇ ਨਾਮ ਪੰਜਾਬੀ ਵਿੱਚ ਲਿਖੋ।

(iii) ਦਿਨਾਂ ਦੇ ਨਾਂ ਲਿਖੋ।

(iv) ਸੱਠ ਤੋਂ ਸੱਤਰ ਤੱਕ ਦੀ ਗਿਣਤੀ ਸ਼ਬਦਾਂ ਵਿੱਚ ਲਿਖੋ।

(v) ਕਿੱਤਾਕਾਰੀ ਨਾਲ ਸੰਬੰਧਤ ਕੋਈ ਪੰਜ ਸ਼ਬਦ ਲਿਖੋ।

5×1=5

2. (ੳ) ਭਾਸ਼ਾ ਦੀ ਪਰਿਭਾਸ਼ਾ ਲਿਖੋ। ਇਸ ਦੀ ਮਨੁੱਖੀ ਜੀਵਨ ਵਿੱਚ ਕੀ ਅਹਿਮੀਅਤ ਹੈ ? 5

(ਅ) ਮਾਤ ਭਾਸ਼ਾ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਉ। 5

(ਏ) ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀਆਂ ਮੁੱਖ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਦੱਸੋ। 5

3. (ੳ) ਮਿਸ਼ਰਤ ਵਾਕ ਦੀ ਪਰਿਭਾਸ਼ਾ ਲਿਖੋ ਅਤੇ ਪੰਜ ਮਿਸ਼ਰਤ ਵਾਕ ਲਿਖੋ। 5

(ਅ) ਕਾਰਜ ਦੇ ਆਧਾਰ ਉੱਤੇ ਪੰਜਾਬੀ ਵਾਕਾਂ ਦੀ ਵੰਡ ਕਰੋ ਅਤੇ ਇਨ੍ਹਾਂ ਦੀਆਂ ਉਦਾਹਰਨਾਂ ਵੀ ਲਿਖੋ। 5

(ਏ) ਬਾਜ਼ਾਰ ਵਿੱਚ ਵਰਤੇ ਜਾਂਦੇ ਪੰਜ ਵਾਕ ਬਣਾਓ। 5

Exam. Code : 107402
Subject Code : 2278

B.Sc. (Biotechnology) 2nd Semester

GENERAL MICROBIOLOGY-B

Paper–BT-8

Time Allowed—3 Hours] [Maximum Marks—40

Note : – Attempt as per directed.

SECTION–A

(All questions are compulsory) 1×8=8

1. Define and explain the following :

   (i) Diauxic growth

   (ii) Sporulation

   (iii) Name two plant viruses

   (iv) Name two animal viruses

   (v) Pathogenicity

   (vi) Toxigenicity

   (vii) Fermentation

   (viii) Bioprocess.

SECTION–B

(Attempt any **five** questions) 5×4=20

2. Design an experiment to achieve diauxic growth.

3. Diagrammatically explain the sporulation of bacteria.

4. Classify the viruses based on transcription.

5. Discuss and explain the replication processes of herpes simplex.

6. Discuss and explain the natural resistance mechanism against microorganisms.

7. Discuss and explain non specific defence mechanisms.

8. Discuss the TCA cycle.

9. Discuss the ETC.

SECTION–C

(Attempt any **two** questions) 6×2=12

10. Discuss and explain the regeneration process of bacteria.

11. Discuss and explain the Herpes simplex virus replication processes.

12. Discuss the microbial pathogenicity in adhesion and invasiveness

13. Discuss and explain how a heterologous protein can be produced by a bacteria.

Exam. Code : 107402
Subject Code : 2279

B.Sc. (Bio Technology) 2nd Semester

BIOCHEMISTRY-II

Paper—BT-9

Time Allowed—3 Hours] [Maximum Marks—40

Note :—(1) Attempt **ALL** parts from Section-A. Each Part 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) Phosphoglycerides.

(ii) Glycosphingolipids.

(iii) Proline.

(iv) Secondary structure of protein.

(v) Cofactors.

(vi) Vitamin-D.

(vii) Secretory glands.

(viii) Growth hormone.

SECTION—B

2. Classify lipids and fatty acids.
3. Steroids.
4. Mention the biological role of protein.
5. Discuss different forces which stabilize protein structure.
6. Mention the deficiency symptoms of vitamin-C.
7. Discuss about the fat soluble vitamins.
8. Discuss about disorder associated with steroid hormones.
9. Write a short note on amino acid hormones.

SECTION—C

10. Discuss the general function of lipid and provide an overview of their classification.
11. Discuss various structural organizations of proteins.
12. What are fat and water soluble vitamins ? Discuss their deficiency symptoms.
13. Discuss major classes of hormones and their role in human.

Exam. Code : 107402
Subject Code : 2280

B.Sc. (Bio Technology) 2nd Semester

DRUG ABUSE : PROBLEM, MANAGEMENT AND PREVENTION

Time Allowed—Three Hours] [Maximum Marks—50

SECTION—A

It consists of **FIVE** short answer type questions. Candidates will be required to attempt **THREE** questions. Each question carries **5** marks. Answer to any of the question should not exceed **2** pages. (15 marks)

5×3=15

1. Discuss the consequences of Drug Abuse with special reference to law and order problem.
2. Write a short note on behavioral and cognitive therapy.
3. Discuss the role of publicity and media in the prevention of Drug Abuse.
4. How to do Random Testing on students as a preventive measure ?
5. Describe Environmental Intervention as management of Drug Abuse.

SECTION—B

It consists of **FOUR** essay type questions. Candidates will be required to attempt **TWO** questions. Answer to any of the question should not exceed **4** pages. (20 marks) 10×2=20

6. Discuss the consequences of Drug Abuse for Individual.
7. Discuss the role of counselling as Psycho-Social management.
8. Write about the smuggling of Drugs. What measures can be used to prevent it ?
9. Do you think role of family can help in preventing drug abuse ? Explain.

SECTION—C

It consists of **TWO** questions. Candidates will be required to attempt **ONE** question. Answer to be question should not exceed **5** pages. (15 marks) 15×1=15

10. Discuss the role of medication for treatment of drug abuser and reduce the withdrawal effects.
11. Describe the role of media with special reference to educational and awareness programmes for prevention of Drug Abuse.