



**K.L.E. Society's
Raja Lakhamagouda Science Institute (Autonomous),
Belagavi – 590001**

Question Paper Booklet

**B.Sc – I Semester
March/April - 2021**



KLE Society's
Raja Lakhamagouda Science Institute (Autonomous),
Belagavi.

First Semester B.Sc. (CBCS) Degree Examination March/April-2021
SUB: BIOTECHNOLOGY

Duration: 3 Hrs

Max Marks: 70

Instruction to candidates

- 1) Attempt all questions.
- 2) Draw neat labeled diagrams wherever necessary

I Answer any FIVE of the following.**5X2=10**

1. Define microbiology and Biochemistry.
2. Write principle of laminar air flow.
3. What are nucleosides?
4. What are moderant?
5. What are epimers? Give example.
6. Define light microscope.
7. What are amino acids?

II Answer any SIX of the following.**6X5=30**

8. Define bacterial growth curve and Explain.
9. Write a note on structure of mRNA.
10. Write a note on simple staining.
11. Give an account on biological functions of lipids.
12. Explain chemical method of sterilization.
13. Explain properties of glucose and write its structure.
14. Write a note on unsaturated fatty acids.
15. Explain serial dilution method.

III Answer any THREE of the following.**3X10=30**

16. With neat labeled diagram explain the structure of bacteria.
17. Define Biotechnology and Explain branches of Biotechnology.
18. With neat diagram explain the structure of DNA.
19. Give a detailed account on structural organization of protein.
20. With neat labeled diagram explain compound microscope.

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KLE Society's

**Raja Lakhamagouda Science Institute (Autonomous),
Belagavi.**

First Semester B.Sc. Degree Examination Aug- 2021

SUB: BOTANY

Duration: 3 Hrs

Max Marks: 70

Instructions to candidates:

- 1) Attempt all questions.
- 2) Draw labelled diagrams wherever necessary.

I. Answer any FIVE of the following:

5X2=10

1. Glomerule
2. Coenocytic mycelium.
3. Sorus.
4. Operculum.
5. Endo-mycorrhiza.
6. Resin canal.
7. Pili.

II. Answer any SIX of the following :

6X5=30

8. Describe the thallus structure of Nostoc.
9. Describe the gametophores (Thallus Structure) of Funaria.
10. Describe the all structure of a Typical Bacteria.
11. Describe the anatomy of Equisetum stem.
12. What are Lichens? Give an account on types of Lichens.
13. With a neat labeled diagram describe the male cone of Gnetum.
14. Describe asexual reproduction in Penicillium.
15. Describe the L.S. of Selaginella strobilus.

III. Answer any THREE of the following:

3X10=30

16. With neat labeled diagrams describe the life cycle of Puccinia on the Primary host wheat.
17. Describe structure of V.S. of Sporophyte of Marchantia.
18. Describe the stelar evolution in Pteridophytes with neat labeled diagrams.
19. What is Lytic cycle? Describe the steps involved in Lytic cycle.
20. Describe sexual reproduction in Volvox.

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KLE Society's

**Raja Lakhamagouda Science Institute (Autonomous),
Belagavi.****First Semester B.Sc. Degree (CBCS) Examination March/April - 2021****SUB: CHEMISTRY****Duration: 3 Hrs****Max Marks: 70***Instruction to Candidates:*

1. *Attempt all questions.*
2. *Draw neat labelled diagrams and give equations wherever necessary*

I. Answer any FIVE of the Following.**5X2=10**

1. State (n+l) rule.
2. Write the electronic configuration of an element having $z=29$.
3. What is hydrogen bonding? Give an example.
4. What are nucleophiles? Give an example of neutral nucleophile.
5. What is Wurtz reaction? Write its general equation.
6. How are alkenes prepared by dehydration of alcohols?
7. Write the relationship between K_p and K_c for the reaction $2\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{SO}_3(\text{g})$.

II. Answer any SIX of the Following.**6X5=30**

8. Explain the significance of ψ and ψ^2 functions.
9. What are quantum numbers? Give significance of Principal quantum number and Azimuthal quantum number.
10. What are free radicals? Explain the formation, structure and stability of free radicals.
11. What is angle strain? Calculate the angle strain in cyclopropane and cyclobutane.
12. Describe the Markownikoff's and anti-Markownikoff's reaction with suitable example.
13. Explain the following:
i) Ozonolysis ii) Hydration of alkenes
14. Derive the reaction $C_p - C_q = R$.
15. Derive Vant Hoff's reaction isotherm.

2. Any revealing of identification, appeal to valuator and / or equations written will be treated as malpractice.

III. Answer any THREE of the Following.

3X10=30

16. a) Draw the shapes of s, p and d atomic orbitals.
b) Explain i)Aufbau principle and ii) Pauli's exclusion principle for filling up of electrons.
17. a) Explain Huckel's rule of aromaticity taking any two examples.
b) How do you determine the configuration of butanedioic acid using anhydride formation and dipole moment measurement?
18. a) What happens when higher alkyne is treated with alkaline $KMnO_4$? What is its importance?
b) Explain hydroboration and oxidation of propene.
19. a) Derive Kirchoff's equation.
b) Derive an expression for the variation of equilibrium constant K_p with temperature.
20. a) What is dehydrohalogenation? Explain with an example.
b) Derive Joule-Thomson coefficient of an ideal gas

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KLE Society's

**Raja Lakhamagouda Science Institute (Autonomous),
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**First Semester B.Sc. (CBCS) Degree Examination March/April -2021
SUB: COMPUTER SCIENCE**

Duration: 3Hrs

Max Marks: 70

Instructions to candidates:

- 1) Question paper has 3 sections. Answer all questions.
- 2) Simple Calculators are allowed.
- 3) Write all the intermediate steps and draw diagrams whenever necessary.

I Answer any FIVE of the following:

2x5=10

1. Define data encapsulation.
2. What is function prototype?
3. Mention visibility modes used in C++?
4. What is destructor? Write symbol of destructor.
5. What is inheritance?
6. Define abstract class.
7. What is a virtual function?

II Answer any SIX of the following:

5x6=30

8. Differentiate between POP and OOP.
9. Describe the structure of C++ program.
10. Define an array. Explain its types.
11. What is scope resolution operator? Explain its uses.
12. Compare the arguments pass by value and pass by reference.
13. What is parameterized constructor? Explain with example.
14. What is virtual function? List out the rules for virtual function.
15. Write a program to generate the Fibonacci sequence into limit using for statement.

III Answer any THREE of the following:

10x3=30

16. Explain basic concepts of OOPS in detail.
17. What are string handling functions in C++. Explain with example.
18. Define friend function. Explain with programming example.
19. Write a C++ Program to demonstrate the operator overloading by overloading + and -.
20. Explain exception handling fundamentals and options.



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**Raja Lakhamagouda Science Institute (Autonomous),
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**First Semester B.Sc. Degree Examination Aug. – 2021
SUB: ELECTRONICS**

Duration: 3 Hrs

Max Marks: 70

Instructions to candidates:

- 1) Attempt all Questions.
- 2) Draw diagrams, wherever necessary.

I. Answer any FIVE of the following

5x2=10

1. State Kirchoff's Current Law.
2. What is rectifier? Mention different types.
3. Define ripple factor. Write its value for half wave rectifier.
4. Define α and β .
5. If β of a transistor is 100, find the value of stability factor in Fixed Bias method.
6. Draw neat diagrams for following configurations.
a) Voltage series feedback b) current series feedback.
7. Distinguish between damped and undamped oscillations.

II. Answer any SIX of the following.

6x5=30

8. State and prove maximum power transfer theorem.
9. With neat circuit diagram explain current divider theorem in detail.
10. Describe the working of half wave rectifier in detail.
11. A full wave rectifier has a load of $1k\Omega$. The ac voltage applied to the diodes is 200V. If diode resistance is neglected, calculate
a) Average dc voltage b) Average dc current.
12. Explain the procedure to draw the DC load line.
13. With neat circuit diagram explain voltage divider bias method.
14. Show that gain with positive feedback is given by $A' = A/(1 + \beta A)$.
15. In Colpitt's Oscillator if the value of $L=1mH$ and $C=0.005\mu f$, find the frequency of oscillation.

III. Answer any THREE of the following.

3x10=30

16. State and prove Thevenin's theorem.

17. In Full Wave Rectifier circuit show that

a) Efficiency (η) is 81.2% **b)** ripple factor. **(5+5)**

18. With neat circuit diagram explain single stage RC coupled CE amplifier and also describe frequency response curve.

19. Explain the working of Phase shift oscillator with neat circuit diagram, waveform and mention the expression for frequency of oscillation.

20. a) Write short note on **i)** current source **ii)** voltage source.

b) Describe Barkhausen criterion for sustained oscillation. **(5+5)**

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**Raja Lakhamagouda Science Institute (Autonomous),
Belagavi.****First Semester B.Sc. Degree Examination Aug.-2021
SUB: STATISTICS**

Duration: 3 Hrs

Max Marks: 70

Instructions to candidates:

- 1) Mathematical and Statistical tables will be supplied on request.
- 2) Use of calculators is permitted.

I. Answer any FIVE of the following**2X5=10**

1. What are primary and secondary data?
2. Distinguish between inclusive and exclusive class interval.
3. What is mode? Write the formula for continuous case.
4. What is kurtosis?
5. Define axiomatic definition of probability.
6. Why Fisher index number is called ideal?
7. What do you mean by consumer price index number?

II. Answer any SIX of the following.**6X5=30**

8. What are functions and limitations of statistics?
9. Discuss the properties of arithmetic mean.
10. Discuss the procedure of drawing Ogives curve.
11. What is tabulation? Explain different parts of table.
12. What is skewness? Discuss different types of skewness.
13. State and prove addition theorem of probability.
14. Two balls are drawn from 5 white and 4 black balls. What is the probability that the drawn balls are of
i) Same colour ii) Different colour.
15. Define Marshall Edgeworth price index number. Show that it satisfies time reversal test

III. Answer any THREE of the following

3X10=30

16. What is classification? Explain different types of classification.

17. Define Harmonic and Geometric mean. Show that for two numbers $A > G > H$.

18. Define standard deviation and coefficient variance. Discuss the properties of standard deviation.

19. a) Define:

i) Sample Space

ii) Mutually exclusive events

iii) Conditional Probability

b) Probability that A solves a problem is $\frac{1}{3}$ and that B solves it is $\frac{1}{4}$. Find probability

that i) The problem is solved.

ii) None of them solve the problem

20. Define Fisher quantity index number? Show that Fisher index number satisfied both time reversal test and factor reversal test.



**Raja Lakhamagouda Science Institute (Autonomous),
Belagavi.**

**First Semester B. Sc Degree Examination Aug.- 2021
ZOOLOGY (CBCS)**

Duration: 3 Hrs

Max Marks: 70

Instruction to Candidates

- 1) Attempt all questions.
- 2) Draw neat labelled diagrams wherever necessary

I. Answer any Five of the following.**5x2=10**

1. What is polymorphism? Give an example.
2. What is pseudocoelom? Give an example.
3. Write the dental formula of rat.
4. What is neoteny? Give an example.
5. What is metamerism? Give example.
6. Distinguish between poikilotherms and homeotherms. Give example.
7. Assign the following into their respective class.
 - a) Nereis
 - b) Woodpecker
 - c) Prawn
 - d) Turtle.

II. Answer any Six of the following.**6x5=30**

8. Explain locomotion in protozoa.
9. Write the Parasitic adaptation in Round worm.
10. Explain canal system in sycon.
11. Describe retrogressive metamorphosis in Urochordata.
12. Write the difference between Chordates and Non chordates.
13. Explain flight adaptation in birds.
14. Explain the types of scales in fishes.
15. Mention the salient features of order-cetacea.

III. Answer any Three of the following.**3x10=30**

16. Write the general characters of class Amphibia. Classify upto orders with suitable examples.
17. Explain social organization in Honey-Bee.
18. With the help of neat labelled diagram explain female urinogenital in Rat.
19. Write the general characters of phylum Annelida. Classify upto classes with suitable examples.
20. With the help of neat labelled diagram explain water vascular system in Starfish.



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KLE Society's
Raja Lakhamagouda Science Institute (Autonomous),
Belagavi.

First Semester B.Sc. (CBCS) Degree Examination March/April -2021
ENG01: ENGLISH

Duration: 3Hrs

Max Marks: 70

I. Answer the following questions in a word, a phrase or a sentence each.

10X1=10

1. 'The village schoolmaster' is an extract from _____
2. What is the main theme of 'The Open Window'?
3. Who is the dentist in the story The Barber's Trade Union?
4. What is Jim's full name?
5. Which road does the poet choose in 'The Road Not Taken'?
6. Milton's "On His Blindness" is a _____ a) elegy b) sonnet c) epic d) haiku
7. According to Lincoln to live this life will require _____.
8. Why was Della saving up her money for?
9. Who is Joseph in the story 'Engine Trouble'?
10. What was the name of Mrs. Sappleton's niece?

II. Explain the following with reference to context.

2X5=10

(One each from prose & poetry to be answered)

1. a) "Take your hat off and let me look at it"
b) 'One would think he had seen a ghost'
2. a) "Two roads diverged in a yellow wood,"
b) Teach him to be gentle with people, tough with tough people.

III.

1X10=10

1. Explain the themes of luck, hope and practicality in the story 'Engine Trouble'.

OR

2. Sketch the character of Chandu.

IV.

1X10=10

1. Critically analyse the poem 'On His Blindness'

OR

2. Describe the village Schoolmaster's Skills which made the villagers wonders.

V. A. Fill in the blanks with suitable prepositions.

5X1=5

1. What is the time _____ your watch?
2. I was born _____ 14th June _____ 1988.
3. The dog jumped _____ the well
4. Raju was _____ Delhi _____ seven days
5. Rani Studied _____ hours

B. Give one word substitute for the following:

5X1=5

1. Person who speaks many language _____
2. One who eats human flesh _____
3. Something easily broken _____
4. A woman whose Spouse is dead _____
5. One who does not believe in the existence of god _____

VI. A. Frame meaningful sentence using the given idioms and phrases below:

5X1=5

1. Jump bail
2. Beating around the bush
3. Mum's the word
4. On one's guard
5. Fly at someone's throat

B. You are travelling by train and you have befriended the stranger, introduce yourself to him/her in brief

5X1=5

VII A. Your College is celebrating the Annual Day Function. You have invited the Deputy Commissioner of Belagavi as the chief guest. Prepare a welcome speech for the occasion.

5X1=5

B. Prepare an agenda for the celebration of 'Science Day' in your college.

5X1=5