

January- 2020 Cycle Internal Assessments 2020

First Semester / M.Sc.,



Karnataka State Open University
Mukthagangothri, Mysuru – 570 006

Website : www.ksoumysuru.ac.in

EPABX No.: 0821-2519948, 2519941, 2519943, 251995

M.Sc. First Semester Assignment (2020)

Guidelines :

Under the notification of University Grants Commission (ODL) 2017, the evaluation, covers both internal assessment and term end examination. In the case of the former, the University are created continuous assessment for which primarily assignment system is followed. Assignment is given hereunder on the basis of the syllabus prescribed by the University. The questions relating to assignment are designed keeping in view the term end examination. Term end examination will be conducted at the end of the year of study as per calendar of events.

The continuous assessment comprises of assignment, seminar, test, field work etc., presently, the assignment is taken up, and its information are as follows.

- Two questions are given under each course. Both the questions one compulsorily. There are 4 courses during first semester M.Sc., Programme.
- Each question carries **10** marks.
- The students are hereby instructed to answer the questions by referring the text books, SLM, journals and others.
- Only hand written assignments are considered. The typed material or computer printouts are not considered under any circumstances.
- In case the study material is replicated in the assignments, they will be not considered for valuation.
- Write assignment of each course separately, using A4 Sheet.
- The students shall indicate their name, roll number, course, mobile number without fail.
- Keep the assignments in a single cover and superscribe it as Assignments for (**Programme Name**).
- M.Sc., students shall submit the assignment to their respective departments. Address to send the assignments-The **Chairman (Concerned Department) Karnataka State Open University Mysuru-570006. (M.Sc Students should not submit the assignments to any other Regional Centres)**

The students may feel free to contact any faculty member either in person or over phone. The contact numbers will be available in prospectus/website.

Important date for Submission of the Assignment

Sl No.	Assignment Number	Last Date of Submission
1	Assignment	10 th May 2020

Dean (Academic)

Assignment topics for I Semester M.Sc. Chemistry (2020-21)

Course- MCH 1.1 -Inorganic Chemistry-I

- 1) What is radius ratio? Explain its significance,
- 2) Explain the formation, bond order, magnetic property of O_2 molecule orbitals according to Molecular orbital theory.

Course- MCH 1.2 -Organic Chemistry-I

- 1) With suitable example, explain the Electrophilic aromatic substitution reactions and their mechanism.
- 2) What are reaction intermediates? Discuss the formation, structure and stability of Free radical intermediate.

Course- MCH 1.3-Physical Chemistry-I

- 1) Differentiate between reversible and consecutive reactions. Derive their rate law equations.
- 2) Write a note on fugacity and free energy, entropy and free energy and their changes

Course- MCH 1.4-Chemical Spectroscopy

- 1) Discuss the classification of molecule based on symmetry.
- 2) Explain the conditions for resonance in ESR spectroscopy.

Instructions

- *All questions are compulsory and carry 5 marks each*
- Assignment for each course (papers) should be submitted separately.
- Assignments should be hand written on A4 size paper and bound properly.
- **Course (paper) Title, Register number and Name of the candidate** should be clearly mentioned on each assignment.

M.Sc. Geography (Jan-2020 Cycle)
Assignment topics for First Semester

- Instructions:** 1. Answer any one of the following questions from each course.
2. Each question carries 10 marks.

Course code-Geo-1.1 Geomorphology (ಭೂಸ್ವರೂಪ ರಚನ ಶಾಸ್ತ್ರ)

1. What are endogenic movements? Describe its types.
ಅಂತರ್ಜನಿತ ಚಲನೆಗಳು ಎಂದರೇನು? ಅದರ ವಿಧಗಳನ್ನು ವಿವರಿಸಿ.
2. Describe the erosional and depositional landforms of Wind.
ಗಾಳಿಯ ಸವೆತ ಮತ್ತು ಸಂಚಯನದಿಂದಾದ ಭೂಸ್ವರೂಪಗಳನ್ನು ವಿವರಿಸಿ.

Course code-Geo-1.2 Cultural Geography (ಸಾಂಸ್ಕೃತಿಕ ಭೂಗೋಳಶಾಸ್ತ್ರ)

1. Explain the concept of convergence of culture.
ಸಾಂಸ್ಕೃತಿಕ ಒಗ್ಗೂಡುವಿಕೆ ಪರಿಕಲ್ಪನೆಯನ್ನು ವಿವರಿಸಿ.
2. Describe the various patterns of rural settlements.
ವಿವಿಧ ರೀತಿಯ ಗ್ರಾಮೀಣ ವಸತಿ ಮಾದರಿಗಳನ್ನು ವಿವರಿಸಿ.

Course code-Geo-1.3 Resource Geography (ಸಂಪನ್ಮೂಲ ಭೂಗೋಳಶಾಸ್ತ್ರ)

1. Write a note on reserve, distribution, production and trade of Natural Gas in the world.
ಪ್ರಪಂಚದಲ್ಲಿ ಸ್ವಾಭಾವಿಕ ಅನಿಲದ ನಿಕ್ಷೇಪ, ಹಂಚಿಕೆ, ಉತ್ಪಾದನೆ ಮತ್ತು ವ್ಯಾಪಾರ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.
2. Discuss the trends in utilization of water with reference to India.
ಭಾರತಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ನೀರಿನ ಬಳಕೆಯ ಪ್ರವೃತ್ತಿಯನ್ನು ಚರ್ಚಿಸಿ.

Course code: Geo-1.4 Environmental Geography (ಪರಿಸರ ಭೂಗೋಳಶಾಸ್ತ್ರ)

1. Explain the concept of Ecotourism.
ಪರಿಸರ ಪ್ರವಾಸ ಪರಿಕಲ್ಪನೆಯನ್ನು ವಿವರಿಸಿ.
2. Discuss the causes and consequences of depletion of ozone layer.
ಓಜೋನ್ ಪದರ ಕ್ಷೀಣಿಸುವಿಕೆಯ ಕಾರಣಗಳು ಮತ್ತು ಪರಿಣಾಮಗಳನ್ನು ಚರ್ಚಿಸಿ.

Course code: Geo-1.5 Map analysis (ನಕ್ಷಾ ವಿಶ್ಲೇಷಣೆ)

1. Discusses the importance of Topographical maps.
ಸ್ಥಳ ಸ್ವರೂಪ ನಕ್ಷೆಗಳ ಪ್ರಾಮುಖ್ಯತೆಯನ್ನು ಚರ್ಚಿಸಿ.
2. Describe the marginal information of the Topographical maps.
ಸ್ಥಳ ಸ್ವರೂಪ ನಕ್ಷೆಗಳ ಅಂಚಿನ ಮಾಹಿತಿಯನ್ನು ವಿವರಿಸಿ.

M.Sc. Physics (2019-20) (January batch)

Assignment questions of 1st semester

Course MP 1.1: Mathematical Methods of Physics: (5 X 2=10)

1. Determine the eigen values and eigen vectors of:

$$\begin{pmatrix} -\cos \theta & -\sin \theta & 0 \\ \sin \theta & -\cos \theta & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

2. Define gamma and beta functions. Also obtain the relationship between them.

Course MP 1.2: Classical Mechanics: (5 X 2=10)

1. Construct the Lagrangian equation for a double pendulum.
2. Solve the harmonic oscillator problem by using Hamilton-Jacobi method.

Course MP 1.3: Atomic and Molecular Physics: (5 X 2=10)

1. Discuss briefly the principal features of pure rotational spectrum of a diatomic molecule.
2. Explain Raman Effect and laser Raman spectroscopy.

Course MP 1.4: Solid State Physics & Electronic Devices: (5 X 2=10)

1. What are Brillouin zones? Explain 1-D, 2-D and 3-D Brillouin zones.
2. Elaborate on the transition capacitance associated with the p-n junction.

***Instructions:**

- All topics are compulsory.
- Assignments should be hand-written on A-4 size paper and bound properly.
- **Course (paper) Title, Register number and Name of the candidate** should be clearly mentioned the assignment.
- Assignment should be submitted to “The Chairman, Department of Studies in Physics, KSOU, Mysuru-6”.

M.Sc PSYCHOLOGY (FIRST SEMESTER) 2019-20 (Jan Cycle)

Internal Assignment

Note: Answer any one question in each course. Each question carries 10 marks.

ಸೂಚನೆ: ಪ್ರತಿಯೊಂದು ಕೋರ್ಸ್‌ನಲ್ಲಿ ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ 10 ಅಂಕಗಳು

COURSE- I: SYSTEMS IN PSYCHOLOGY

ಕೋರ್ಸ್- I: ಮನೋವಿಜ್ಞಾನದಲ್ಲಿನ ವ್ಯವಸ್ಥೆಗಳು.

Discuss the issues and themes in psychology.

ಮನೋವಿಜ್ಞಾನದ ವಿವಾದಾಂಶಗಳು ಮತ್ತು ಪ್ರಮುಖ ವಿಚಾರಗಳನ್ನು ಚರ್ಚಿಸಿ.

Or/ಅಥವಾ

Explain the basic principles of Gestalt psychology.

ಗೆಸ್ಟಾಲ್ಟ್ ಮನೋವಿಜ್ಞಾನದ ಮೂಲ ತತ್ವಗಳನ್ನು ವಿವರಿಸಿ.

COURSE-II: BIOLOGICAL BASIS OF BEHAVIOUR

ಕೋರ್ಸ್- II: ವರ್ತನೆಯ ಜೈವಿಕ ಮೂಲಾಧಾರಗಳು

Describe the Physiological Methods used in Bio-Psychology.

ಜೈವಿಕ ಮನೋವಿಜ್ಞಾನದಲ್ಲಿ ಬಳಸುವ ಶಾರೀರಿಕ ವಿಧಾನಗಳನ್ನು ವರ್ಣಿಸಿ.

Or/ಅಥವಾ

Discuss the role of Brain in Learning and memory.

ಕಲಿಕೆ ಮತ್ತು ಸ್ಮರಣೆಯಲ್ಲಿ ಮಿದುಳಿನ ಪಾತ್ರವನ್ನು ಚರ್ಚಿಸಿ.

COURSE- III: COGNITIVE PROCESSES

ಕೋರ್ಸ್- III: ಸಂಜ್ಞಾನಾತ್ಮಕ ಪ್ರಕ್ರಿಯೆಗಳು

Explain the theories of Attention.

ಅವಧಾನದ ಸಿದ್ಧಾಂತಗಳನ್ನು ವಿವರಿಸಿ.

Or/ಅಥವಾ

Discuss the process and techniques of Decision making..

ನಿರ್ಧಾರ ಕೈಗೊಳ್ಳುವಿಕೆಯ ಪ್ರಕ್ರಿಯೆ ಮತ್ತು ತಂತ್ರಗಳನ್ನು ಚರ್ಚಿಸಿ.

COURSE- IV: MOTIVATIONS AND EMOTIONS

ಕೋರ್ಸ್-IV: ಅಭಿಪ್ರೇರಣೆಗಳು ಮತ್ತು ಸಂವೇಗಗಳು.

Discuss the Psychodynamic theories of motivation..

ಅಭಿಪ್ರೇರಣೆಯ ಮನೋವಿಶ್ಲೇಷಣಾ ಸಿದ್ಧಾಂತವನ್ನು ಚರ್ಚಿಸಿ.

Or/ಅಥವಾ

Explain the prevention and control of stress.

ಪ್ರತಿಬಲನದ ತಡೆಗಟ್ಟುವಿಕೆ ಮತ್ತು ನಿಯಂತ್ರಣವನ್ನು ವಿವರಿಸಿ.

Note: Internal assessment for 10 marks will be assessed during Personal Contact Programme.

**MSc Environmental Science I Semester
Assignment Questions (2020 January cycle)**

Note: The internal assessment for I Semester M.Sc. Environmental Science will be given at the time of Personal Contact Programme.

Contact Details:

Chairman: Dr.J.S. Chandrashekar

Mobile: 9663061978

Department of Studies and Research in Biochemistry
I Semester Internal Assignment Questions

- INSTRUCTIONS:**
- 1. Submit own hand written assignments for each course separately (i.e. 4 assignments for 4 courses respectively).*
 - 2. Each assignment is for 10 marks and should be written concisely (Maximum of 3 pages/question).*
 - 3. Last date per submission: --/--/2020*

BC 1.1: BUILDING BLOCKS OF BIOMOLECULES (01x10 = 10)

1. Explain homo and heteropolysaccharides with two examples each.
2. Write a detailed note on physicochemical properties of nucleic acids

BC 1.2: BIOCHEMICAL TECHNIQUES (01x10 = 10)

1. Explain gel filtration chromatography. How is gel filtration used in determination of molecular weight of proteins.
2. Explain how spectroscopic techniques are used in characterization of macromolecules.

BC 1.3: PHYSIOLOGY AND NUTRITION (01x10 = 10)

1. Write in detail about the buffering action of blood.
2. Explain the endocrine and exocrine role of pancreas.

*** Optional paper, answer any one course**

BC 1.4: *CELL BIOLOGY / GENERAL CHEMISTRY (01x10 = 10)

1. Write the differences between Mitosis and Meiosis
2. Explain the main differences between plant and animal cells

or

BC 1.4B: *GENERAL CHEMISTRY

1. Describe Symbiotic and nonsymbiotic fixation of atmospheric nitrogen
2. What are SN1 and SN2 reactions? Write any five differences between SN1 and SN2 reactions.

**MSc Information Science I Semester
Assignment Questions**

Note : Answer all questions. Each Question carries 10 marks.

IS 1.1 : Essential Mathematics

1. Solve the following recurrence relations by the method of back tracking.
 - i) $b_n = 3b_{n-1} + 1, b_1 = 7$
 - ii) $a_n = a_{n-1} + 2n, a_1 = 5$
2. Describe the origin of graph theory.

IS 1.2 : Programming Concepts and C

1. Explain the structure of C program with a programming example.
2. Describe the different storage classes available in C.

IS 1.3 : Operating System

1. Explain various types of Operating Systems.
2. Explain any two CPU scheduling algorithms.

IS 1.4 : Data Structures and Algorithms

1. Discuss the various operations performed on singly linked lists.
2. Find optimal solution for the knapsack problem, where $M=15$, the profit associated $(P_1, P_2, P_3, P_4, P_5, P_6, P_7) = (10, 5, 15, 7, 6, 18, 13)$ and weight associated $(W_1, W_2, W_3, W_4, W_5, W_6, W_7) = (2, 3, 5, 7, 1, 4, 1)$

IS 1.5 : Practical 1: C Programming and Data Structure

1. Write a C program to insert and delete first element of singly linear linked list.

IS 1.6 : Practical 2: Operating System

1. Write a program to simulate FIFO page replacement algorithm.

DEPARTMENT OF COMPUTER SCIENCE
MSc- Computer Science
First Semester January Cycle 2020
ASSIGNMENT QUESTIONS

Instructions:

NOTE: You are required to read the following instructions carefully before you answer.

1. Write the *Roll Number, Name and Title of the course* at the beginning of your answer of each subject.
2. You should answer *all Questions* under each paper.
3. You should write the assignment separately with regard to each paper.
4. Assignments without **Roll No. and Name** will be rejected.
5. After writing the assignment, you should tag the assignment together, put them in a cover and send it to the address given below.
6. Assignment cover should be superscribed by “**Assignment for MSc-Computer Science –First Semester**” and write your **Roll number and Name**.
7. The students are **ADVISED TO KEEP A COPY OF THE ASSIGNMENTS** with them and submit it in case the University demands the same.

Note: Test will be conducted for TEN marks during the contact program for all the subjects.

Max Marks=10

Answer the following questions from each Course

Course :1 CS 1.1 Discrete Mathematics

1. Prove the following statements by the method of contradiction.
 - a. If n^2 is an even number, then n is an even number.
 - b. If there are 13 persons in a room, two or more of these have their birthday in the same month.
 - c. If the bases and the heights of two triangles are equal, then the areas of the triangles are equal.
2. Explain Hamiltonian circuits and paths.

Course :2 CS-1.2 Object Oriented Programming with Java

1. What is meant by an Operator ? Explain different types of numerical operators in JAVA.
2. Why do you need wrapper class? Explain any five wrapper class primitives.

Course :3 CS-1.3 Computer Architecture

1. Name the functional units of a computer and describe its functions.
2. Explain the Arithmetic Operations on Floating point number. Sketch out the Guard Bits and Truncation.

Course :4 CS-1.4 Data Structure

1. Explain the types of data structures with a neat diagram,
2. What is the difference between binary tree and a general tree.

Course :5 CS-1.5 Practical-1 : OOP using Java

1. Write a Java Programme to illustrate the arithmetic exception.
2. Write a Java Programme to demonstrate overloading feature.
3. Write a Java Programme to display balance information using packages.
4. Write a Java Programme to Print names using Thread.

Course :6 CS-1.6 Practical-2 : Data Structure using C.

1. Write a program to represent a given real number in decimal number format to other formats.
2. Write a program to demonstrate basic operations of stack data structure.
3. Write a program to convert infix expression to postfix expression.
4. Write a program to find out factorial of a number n using recursion.

M.Sc. IN CLINICAL NUTRITION AND DIETETICS

IA QUESTIONS

Answer any one question, each question carries 10 marks

I SEMESTER

COURSE-I: HUMAN PHYSIOLOGY

1. Discuss the process of digestion and absorption of proteins in Human body.
2. Elaborate on the structure of Heart with a neat diagram

COURSE-II: PRINCIPLES OF BIOCHEMISTRY

1. Explain the classification of carbohydrates with examples
2. Write short notes on glycolysis

COURSE-III: RESEARCH METHODS AND BIostatISTICS

1. Number of counselling sessions observed among 10 patients were 20,18,10,14,16,11,8,6,17 and 12. Compute Mean, Median, Mode, Range and Standard deviation.
2. Write a flow diagram for research article with explanations.

COURSE-IV: HUMAN NUTRITION

1. Discuss the classification of vitamins with examples
2. Write a note on recent trends in human nutrition.

**M.SC., MATHEMATICS (INTERNAL ASSESSMENT QUESTIONS)
FIRST SEMESTER (2020-21, January Cycle)**

Note: Answer any one full question from each of the following courses.

Course: Math 1.1: Algebra

1. a) State and prove the Lagrange theorem for finite groups.
b) Prove that every integral domain can be embedded in a field.
2. a) Prove that in a unique factorization domain, an element is prime if and only if it is irreducible.
b) State and prove the primitive element theorem.

Course: Math 1.2: Real Analysis – I

1. a) Define a countable set. Prove that every subset of a countable set is countable.
b) Prove that a monotonically increasing sequence is convergent if and only if it is bounded.
2. a) State and prove Quotient comparison test.
b) State and prove Kummer's test and hence prove Raabe's test.

Course- Math 1.3: Complex Analysis – I

1. a) State and prove Lagrange's identity in the complex form.
b) State and prove necessary and sufficient conditions for a function to be analytic.
2. a) If $f(z)$ is analytic in the entire complex plane and bounded, then show that $f(z)$ is a constant function.
b) State and prove Liouville's theorem and hence deduce fundamental theorem of algebra.

Course – Math 1.4: Discrete Mathematics

1. a) State the Principle of Mathematical induction and establish the following result by using the Principles of Mathematical induction $1 \cdot 3 + 2 \cdot 4 + 3 \cdot 5 + \dots + n(n+2) = \frac{n(n+1)(2n+7)}{6}$.
b) State and prove Pigeonhole principle and Extend pigeonhole principle.
2. a) State and solve the towers of Hanoi problem.
b) Define Connectivity relation R^∞ on R . If R and S are equivalence relations on a set A , then prove that the smallest equivalence relation containing both R and S is $(R \cup S)^\infty$.

Course – Math 1.5: Differential Equations

1. a) Define fundamental set. Prove that a set of n -solutions $\{\phi_j(x), j = 1, 2, \dots, n\}$ of linear differential equation $L_n y = 0$ on some interval I forms a fundamental set of solutions if and only if Wronskian $W\{\phi_j(x); j = 1, 2, \dots, n\} \neq 0$ for all $x \in I$.
b) State and prove Sturm's comparison theorem.
2. a) Define complete integral of a non-linear first order partial differential equation. Find the complete integral of the equation $pq - p - q = 0$.
b) Explain the canonical transformation of solving second order partial differential equation.

Department of Biotechnology
Assignment for I semester M.Sc. (2019–20 Jan Cycle)
Karnataka State Open University
Mukthagangothri, Mysore-6

Write in detail on the following

Course- BT 1.1 **Marks- 2 X 10 = 20**

1. Give an account on Classification and nomenclature of Simple Lipids.
2. Explain secondary structure of proteins

Course- BT 1.2 **Marks- 2 X 10 = 20**

1. Explain different kinds and purpose of PAGE.
2. Describe cell fractionation techniques.

Course- BT 1.3 **Marks- 2 X 10 = 20**

1. Give an account on Enzyme kinetics.
2. Describe the mechanism of endoprotein degradation.

Course- BT 1.4 **Marks- 2 X 10 = 20**

1. Write note on structure and functions of components of oxidative phosphorylation.
2. Explain cholesterol biosynthesis and its regulation.

Instructions

- All topics are compulsory.
- Assignment for each course (papers) should be submitted separately.
- Assignments should be hand written on A4 size paper and bound properly.
- On Each assignment **Course (paper) Title, Register number** and **Name of the candidate** should be clearly mentioned.
- Assignment should be submitted to **The Chairman, Department of Biotechnology, KSOU, Mysore-6, on or before**