

**Internal Assessments 2018-19<sup>th</sup> Batch**  
**Third Semester / M.Sc. Programmes**



**Karnataka State Open University**  
**Mukthagangothri, Mysuru – 570 006**

**Website : [www.ksoumysuru.ac.in](http://www.ksoumysuru.ac.in)**

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

## **M.Sc. Third Semester Assignment (2018-19)**

### **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 third semester M.Sc., Programme.
- 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 super scribe 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**

<b>Sl No.</b>	<b>Assignment Number</b>	<b>Last Date of Submission</b>
1	Assignment	30 <sup>th</sup> June 2020

**Dean (Academic)**

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

### Course-MCH 3.1 -Inorganic Chemistry-III

- 1) Discuss the structure of metals-olefin complexes.
- 2) What are cages? Explain the bonding in different types of boron cages.

### Course- MCH 3.2 -Organic Chemistry-III

- 1) Discuss briefly about symmetry restriction in Electronic transition
- 2) Explain the spin-lattice relaxation (longitudinal relaxation)  $T_1$  and spin - spin relaxation (transverse relaxation)  $T_2$  in nmr and their significance.

### Course- MCH 3.3-Physical Chemistry-III

- 1) Discuss various defects in solids.
- 2) Derive the expression of Hammett-Dyrup and Hammett –Zucheracidity functions

### Course-MCH 3.4-Bio-inorganic and Bio-physical Chemistry

- 1) What are metallo biomolecules? Briefly explain the biochemistry of Sodium, Potassium and Chlorine.
- 2) Discuss the diffusion of solution across biomembrane and mechanism of application in the respiratory exchange of  $O_2$  and  $CO_2$

#### Instructions

- Answer any one question from each course and each question carry 10 marks each
- Assignment for each course (papers) should be submitted separately.
- Assignments should be hand written on A4 size paper and bound properly.
- **Course Title, Register number and Name of the candidate** should be clearly mentioned on each assignment.
- **Submit the assignment to Chairman, Department of Studies and Research in Chemistry, Karnataka State Open University, Mukthagangothri, Mysore-06 on or before 30-06-2020**

**Assignment topics for Third semester M.Sc. Microbiology (2018-19 Batch)**

**Course- MB 3.1-Microbial Genetics**

**Marks-1 X 10=10**

1. History and development of microbial genetics.
2. Generalized reproductive cycles of microbes (bacteria, viruses, fungi).

**Course- MB 3.2 -Agricultural Microbiology**

**Marks-1 X 10=10**

1. Microbiology of soil fertility and its management
2. Microbial infectious diseases of vegetables.

**Course- MB 3.3-Food and Dairy Microbiology**

**Marks-1 X 10=10**

1. Detection of food-borne pathogens.
2. Probiotics and prebiotics; evidences for role in human and animal wellness/health.

**Course- MB 3.4-Industrial Microbiology**

**Marks-1 X 10=10**

1. Design of fermenters.
2. Immobilization of microbial enzymes and cells and their applications.

**Instructions**

- You can choose any one assignment topics from among the above topics for each course (paper).
- 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.
- Assignment should be submitted to The Chairman, Department of Microbiology, KSOU, Mysuru-6, **on or before 30-06-2020**
- Second stage of Internal Assessment for 10 marks will be based on other academic activities conducted at the time of contact programme such as Seminar/ Test/ Field visit, etc.

**Assignment topics for Third Semester M.Sc. Geography (June-2018/19 Cycle)**

**Instructions:** 1. Answer any one of the following questions from each course.

ಈ ಕೆಳಗಿನ ಪ್ರತಿ ಪತ್ರಿಕೆಯ ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಿ

2. Each question carries 10 marks.

ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ 10 ಅಂಕಗಳು

**Course code: Geo - 3.1, Urban Geography**

1. Examine the factors influencing the process of urbanization.

ನಗರೀಕರಣ ಪ್ರಕ್ರಿಯೆಯ ಮೇಲೆ ಪ್ರಭಾವ ಬೀರುವ ಅಂಶಗಳನ್ನು ವಿವರಿಸಿ.

2. Write an essay on the problems of world urbanization.

ಪ್ರಪಂಚದ ನಗರೀಕರಣದ ಸಮಸ್ಯೆಗಳನ್ನು ಕುರಿತು ಒಂದು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

**Course code: Geo - 3.2, Agricultural Geography**

1. Explain the salient features of Von Thunen model of agricultural landuse.

ವಾನ್‌ಥೂನ್‌ನ ಅವರ ವ್ಯವಸಾಯ ಭೂಬಳಕೆ ಸಿದ್ಧಾಂತದ ಲಕ್ಷಣಗಳನ್ನು ವಿವರಿಸಿ.

2. Discuss the impact of Green Revolution on Regional Disparities.

ಪ್ರಾದೇಶಿಕ ಅಸಮತೋಲನದ ಮೇಲೆ ಹಸಿರು ಕ್ರಾಂತಿಯ ಪರಿಣಾಮಗಳನ್ನು ಚರ್ಚಿಸಿ.

**Course code: Geo - 3.3, Remote Sensing**

1. Differentiate between Active and Passive remote sensing.

ದೂರ ಸಂವೇದಿಯಲ್ಲಿ ಸಕ್ರಿಯ ಮತ್ತು ನಿಷ್ಕ್ರಿಯ ಕಾರ್ಯದ ವ್ಯತ್ಯಾಸವನ್ನು ತಿಳಿಸಿ

2. Briefly discuss on major reflectance characteristics of soil, vegetation and water resources in remote sensing.

ದೂರ ಸಂವೇದಿಯಲ್ಲಿ ಮಣ್ಣು, ಸಸ್ಯವರ್ಗ ಮತ್ತು ಜಲ ಸಂಪನ್ಮೂಲಗಳ ಪ್ರಮುಖ ಪ್ರತಿಫಲನ ಗುಣಲಕ್ಷಣಗಳನ್ನು ಚರ್ಚಿಸಿ

**Course code: Geo - 3.4, Physical Geography of India with reference to Karnataka**

1. What are the characteristics of the South-West Monsoons in India?

ಭಾರತದ ನೈರುತ್ಯ ಮಾನ್ಸೂನ್‌ನ ಲಕ್ಷಣಗಳಾವುವು?

2. Give an account of the river systems of Karnataka.

ಕರ್ನಾಟಕದ ನದಿ ವ್ಯವಸ್ಥೆಗಳ ವಿವರಣೆ ನೀಡಿ.

**Course code: Geo - 3.5, Statistical Techniques in Geography**

1. Discuss the importance of using statistics in Geography.

ಭೂಗೋಳಶಾಸ್ತ್ರದಲ್ಲಿ ಸಂಖ್ಯಾಶಾಸ್ತ್ರ ಬಳಕೆಯ ಪ್ರಾಮುಖ್ಯತೆ ತಿಳಿಸಿ.

2. Explain the merits and demerits of arithmetic mean.

ಅಂಕಗಣಿತ ಸರಾಸರಿಯ ಗುಣ ಮತ್ತು ಅವಗುಣಗಳನ್ನು ತಿಳಿಸಿ.

**Assignment questions for 3<sup>rd</sup> semester M.Sc. Physics (2018-19 batch)**

**Course MP 3.1: Quantum Mechanics-2**

**(5 X 2=10)**

1. Using Variational principle estimate the ground state energy of the linear harmonic oscillator by taking suitable trial function.
2. Discuss the quantization of electromagnetic fields and arrive at the expressions for electric and magnetic fields.

**Course MP 3.2: Nuclear Physics:**

**(5 X 2=10)**

1. Arrive at the atomic mass of an isotope using Bethe-Wiezsacker semi empirical formula.
2. Give the Fermi's theory of  $\beta$ -decay.

**Course MP 3.3: Condensed Matter Physics:**

**(5 X 2=10)**

1. What are Miller indices? Explain the procedure to obtain Miller indices for a given plane along the crystallographic axis. Hence obtain Miller indices for (100) and (111) planes.
2. Give the Neel's theory of anti-ferromagnetism based on two- sublattice model.

**Course MP 3.4: Accelerator Physics:**

**(5 X 2=10)**

1. Give the construction and working of (i) Van de Graaff generator. (ii) Tandem accelerators.
2. Deduce an expression for the number of particles detected by the detector in the nuclear techniques for elemental analysis.

**\*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 on each assignment.
- Assignment should be submitted to "The Chairman, Department of Studies in Physics, Karnataka State Open University, Mysuru-6".

**DEPARTMENT OF STUDIES AND RESEARCH IN PSYCHOLOGY**  
**M.Sc PSYCHOLOGY (THIRD SEMESTER) –(2018-19)**  
**Internal Assignment Stage-I**

**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- 11: Psychological Disorders**

Explain the causes and treatments of generalized anxiety disorder.

ಸಾಮಾನ್ಯೀಕೃತ ಉದ್ವಿಗ್ನತಾ ವಿಕಾರದ ಕಾರಣಗಳು ಮತ್ತು ಚಿಕಿತ್ಸೆಗಳನ್ನು ವಿವರಿಸಿ.

**Or/ಅಥವಾ**

Discuss the types of personality disorders.

ವ್ಯಕ್ತಿತ್ವ ವಿಕಾರಗಳ ವಿಧಗಳನ್ನು ಚರ್ಚಿಸಿ.

**COURSE-12: Health Psychology**

Discuss the different models of health.

ಆರೋಗ್ಯದ ವಿವಿಧ ಮಾದರಿಗಳನ್ನು ಚರ್ಚಿಸಿ.

**Or/ಅಥವಾ**

Explain the sources and types of stress.

ಒತ್ತಡದ ಮೂಲಗಳು ಮತ್ತು ವಿಧಗಳನ್ನು ವಿವರಿಸಿ.

**COURSE- 13 Psychotherapy**

Explain the ethical principles in Psychotherapy.

ಮನೋರೋಗ ಚಿಕಿತ್ಸೆಯಲ್ಲಿನ ನೈತಿಕ ತತ್ವಗಳನ್ನು ವಿವರಿಸಿ.

**Or/ಅಥವಾ**

Write an essay on group Psychotherapy.

ಸಮೂಹ ಮನೋರೋಗ ಚಿಕಿತ್ಸೆ ಕುರಿತು ಪ್ರಬಂಧವನ್ನು ಬರೆಯಿರಿ.

**COURSE- 14 Community and Rehabilitation Psychology**

Discuss Community programmes for traditional problems in schools

ಶಾಲೆಗಳಲ್ಲಿನ ಸಾಂಪ್ರದಾಯಿಕ ಸಮಸ್ಯೆಗಳ ಕುರಿತಾದ ಸಮುದಾಯ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ಚರ್ಚಿಸಿ.

**Or/ಅಥವಾ**

Describe Rehabilitation programmes for Alcoholics.

ಮದ್ಯವ್ಯಸನಿಗಳಿಗೆ ನೀಡುವ ಪುನರ್‌ಸ್ಥಾಪನಾ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ವರ್ಣಿಸಿ.

**NOTE:** Internal Assignment Stage-II will be given at the time of personal contact program.

## III Semester M.Sc. Environmental Science Assignments

### I – Stage

#### ES 3.1 Water and Waste water Treatment

1. Explain the various forms of underground sources of water and their exploitation.
2. Explain the strategies for water treatment methods for rural supplies.
3. Discuss the design concepts of septic tanks with a neat sketch.

#### ES 3.2 Applications of Remote sensing & GIS in Environmental Monitoring

1. Explain the characteristics of Electro-magnetic radiation.
2. Discuss the scanners used in the Remote Sensing.
3. Explain the role of Remote Sensing in Disaster Management with Examples.

#### ES 3.3. Environmental Impact Assessment

1. Discuss the role of vicious circle of environmental poverty.
2. Write short note on 'Guidelines for evaluating typical impacts of land clearance in project area'.
3. What is the EMS audit? Explain its objectives, roles and responsibilities

#### ES 3.4A Environmental Statistics & Computer Applications

1. What are the advantages of using Excel to manage the data?
- 2. What are the advantages and disadvantages of computer usage?**
3. What is SPSS? Mention the uses of SPSS software.

#### ES 3.4B Occupational Health and Safety

1. Why do we need an emergency plan in work place? Discuss with an example
2. Describe different accident causation theories
3. How do you classify the fire? What are the methods involved in the prevention of fire?

### II – Stage

Field visit and Field visit report consist of 5 marks in each Course.



**Assignment questions for III Sem. MSc Biochemistry**

1. Answer for each question should not exceed 4 pages. Answer One question from each section (course).
2. Last date for submission: **30-06-2020**.

**BC-3.1: METABOLISM – I**

**1X10 = 10**

What is  $\beta$ -Oxidation? How does it differ from  $\alpha$ - and  $\omega$ -oxidation of fatty acids?

**Or**

Explain the role of Insulin and Glucagon on glucose metabolism.

**BC-3.2: METABOLISM – II**

**1X10 = 10**

Explain any three inborn errors of amino acid metabolism

**Or**

Write a note on: Gout and Lysch-Nyhan syndrome

**BC-3.3 IMMUNOLOGY**

**1X10 = 10**

Describe the development of B and T cells

**Or**

Write a note on: a) RIA and B) Types of ELISA

**BC-3.4 PRINCIPLES OF GENETICS**

**1X10 = 10**

What is C-value paradox? Explain with suitable examples.

**Or**

Explain Holliday model of recombination.

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**MSc Information Science III Semester**

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

**IS 3.1 COMPUTER NETWORKS**

1. Briefly explain the functions of different layers in OSI model.
2. Explain IPv4 datagram.

**IS 3.2 OOPS WITH JAVA**

1. What is object oriented programming? Explain its key concepts.
2. Discuss Multiple threads in detail.

**IS 3.3 SOFTWARE ENGINEERING**

1. What is Software Process Model? Explain its requirement in software development.
2. Compare and contrast analysis and design of software activities

**ELECTIVES**

**IS 3.4.1 ADVANCED DATABASE MANAGEMENT SYSTEM**

1. Discuss different kinds of Information Systems.
2. Describe the steps involved in implementation of ERP in an organization.

**IS 3.4.2 E-COMMERCE**

1. Explain various types of e-commerce models.
2. What is Electronic Payment Media? Explain different Methods of Payment Media.

**IS 3.4.3 DATA WAREHOUSING/DATA MINING**

1. Explain process of building Data Warehouses.
2. Explain SPADE algorithm.

**IS 3.4.4 DISTRIBUTED SYSTEMS**

1. Discuss various architectures suitable for a Distributed system
2. Describe in detail the design of cryptographic algorithms.

**IS 3.5 COMPUTER NETWORKS PRACTICALS**

1. Write a program for error detecting code using CRC-CCITT (16bit)
2. Write a Program to implement Leaky Bucket

**IS 3.6 OOPS WITH JAVA PRACTICALS**

1. Write a Java program to implement bank transaction.
2. Write a Java program to implement Multilevel inheritance in Java.

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**DEPARTMENT OF STUDIES IN COMPUTER SCIENCE**  
**MSc- Computer Science**  
**Third Semester**  
**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 in a long book 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(Preferably in a long book).
6. Assignment cover should be superscribed by “**Assignment for MSc-Computer Science –Third Semester**” and write your **Roll number and Name**.
7. Your assignment should reach to:

**DR. D.M Mahesha MCA.,PhD**  
**Chairman/Assistant Professor,**  
Department of Studies in Computer Science,  
Karnataka State Open University,  
Mukthagangothri, Mysore-570006.

9. Assignment sent to any other address of the University will not be valued.
10. 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: CS 3.1 Software Engineering**

1. What is Software Engineering? What is the difference between software engineering and Computer Science?
2. Explain Emergent System Properties.
3. Explain Systems and Their Environment.

**Course: CS 3.2 Visual Technologies**

1. Explain briefly about the building block of the .NET solution?
2. What is the necessity of compiling CIL to platform specific Instruction?
3. Explain in detail about the Common type system?

**Course: CS 3.3 Computer Graphics and Visualization**

1. What are the applications of Computer Graphics?
2. Explain Graphics System?
3. Explain programmer's interface?

**Course: CS 3.4 A Data Mining**

1. What is a dimension cube? Give one example.
2. How data warehouse is implemented?
3. Distinguish between star schema and snowflake schema? Give one example.

**Course: CS 3.4 B Simulation and Modelling**

1. Define simulation.
2. Bring out the applications of simulation in management and human systems.
3. Define system and state. Illustrate the concept with examples.

**Course: CS 3.4 C Theory of Computation**

1. Define alphabet. Give an example.
  2. Define string. Illustrate.
  3. Define non-deterministic finite automation. Give an example.
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## **M.Sc. CND III Semester IA Questions**

**Answer any two questions in each section, each question carries 5 marks**

### **COURSE CODE 301: MEDICAL NUTRITION THERAPY I**

1. Discuss the upper gastro intestinal system.
2. Elaborate on dietary management of cardio vascular diseases.
3. Explain the acute and chronic renal diseases
4. Discuss the diseases of gall bladder.

### **COURSE CODE 302: MEDICAL NUTRITION THERAPY II**

1. Discuss the dietary principles and management of metabolic disorders.
2. Explain the complications and treatment of food Allergy
3. Write the principles of diet for cancer.
4. Describe the nutrition support to be given during pregnancy.

### **COURSE CODE 303: FOOD AND NUTRITION SERVICES**

1. Discuss the nutrition services of inpatient and outpatient
2. Elaborate on personnel management of Hospitals.
3. Describe the principles of Hospital management.
4. Explain goal, objectives of nutrition education.

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**Third semester M.Sc., Mathematics (2018 batch)**  
**Internal Assessment questions**

- Instructions i) Answer all questions from each part**  
**ii) Each question carries 5 marks.**

**Topology - Math 3.1**

1. Define a topological space. Let  $X$  be an infinite set then  $\tau = \{A/A' \text{ is finite}\} \cup \{\emptyset\}$  where  $A'$  is complement of  $A$ . Show that  $\tau$  is a topology on  $X$ .
2. Given a mapping  $f: (X, \mathfrak{T}) \rightarrow (Y, \mathfrak{U})$ , prove that the following are equivalent
  - a)  $f$  is continuous.
  - b)  $B$  closed in  $Y \Rightarrow f^{-1}(B)$  closed in  $X$ .
  - c)  $f(\overline{A}) \subseteq \overline{f(A)}, \forall A \subseteq X$

**Measure and integration -Math 3.2**

1. Let  $A$  be an algebra of  $X$  and  $\{A_i\}$  a sequence of sets in  $A$ . Then prove that there is a sequence  $\{B_i\}$  of sets in  $A$ , such that  $B_n \cap B_m = \emptyset$  for  $n \neq m$  and

$$\bigcup_{i=1}^{\infty} B_i = \bigcup_{i=1}^{\infty} A_i$$

2. Let  $\{E_n\}$  be an infinite decreasing sequence of Lebesgue measurable sets, that is a sequence with  $E_{n+1} \subset E_n, n = 1, 2, 3, \dots$  where,  $n=1, 2, 3, \dots$ . Let  $mE_1$  be finite. Then prove that,

$$m \left[ \bigcap_{i=1}^{\infty} E_i \right] = \lim_{n \rightarrow \infty} (mE_n)$$

**Functional Analysis - Math 3.3**

1. Define Contraction mapping. State and Prove Banach Contraction Mapping Theorem.
2. State and Prove Hahn-Banach theorem for a real linear space.

**Mathematical Modeling - Math 3.4**

1. Explain the needs of mathematical modeling with any four examples and write a short note on classifications of mathematical modeling.
2. Explain the construction of spring dashpot systems.

**Computer Programming -Math 3.5**

1. Explain the following operating systems,
  - i. Memory management
  - ii. Process Management
  - iii. I/O Management
  - iv. Device management
2. Define local and global variables with examples. Also explain the pointer declaration along with examples.

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## Department of Biotechnology

Assignment Questions for III semester M.Sc. Biotechnology (2018-19 Batch) May2020

**Karnataka State Open University**

**Mukthagangothri, Mysore-6**

### First Stage

#### **Course- BT 3.1: Industrial Microbiology**

Answer any one of the following

**Marks-10**

1. Explain the Characteristics and classification of fungi.
2. Write an essay on microbial production of vitamins.

#### **Course- BT 3.2: Gene technology**

Answer any one of the following

**Marks-10**

1. Give an account of Molecular genetic markers and their uses.
2. Explain important diseases targeted by gene therapy.

#### **Course- BT 3.3: Food and Environmental Biotechnology**

Answer any one of the following

**Marks-10**

1. Discuss the production of Single cell proteins along with the advantages and disadvantages
2. Explain the concepts and principles of Bioremediation.

#### **Course- BT 3.4 : Hormones and cell signalling**

Answer any one of the following

**Marks-10**

1. Give an account of Pituitary gland and its hormones.
2. Explain different Plants Hormones and their applications

#### ***Instructions***

- Assignment should be submitted to **The Chairman, Department of Biotechnology, Mukthagangothri, KSOU, Mysore-6, on or before 30-06-2020**
- 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

#### **Second stage**

- **Second stage** Assessment for 10 marks will be based on other academic activities conducted at the time of contact programme such as Seminar/ Test/ Field visit, etc.

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