



**SREENARAYANAGURU OPEN UNIVERSITY**  
*The State University for Education, Training and Research in Blended Format, Kerala*  
University Building, Kureepuzha, Kollam, Kerala-691601 | [www.sgou.ac.in](http://www.sgou.ac.in)

**ASSIGNMENT QUESTIONS**  
**DATA SCIENCE AND ANALYTICS PROGRAMME**  
**SEMESTER-1**  
**FUNDAMENTALS OF INFORMATION TECHNOLOGY**  
**B24DS01DC**

**Instructions for Writing Assignments**

- For the descriptive section, use Illustrations and examples to explain
- Use visuals and diagrams effectively to communicate your ideas.
- Support your choices with evidence and justification.
- Attempt anyone questions from each section.

**SET 1 (Descriptive)**

1. Describe the importance of primary and secondary memory in the functioning of a computer. Explain why both types of memory are essential and how they work together to ensure smooth and efficient computer operations.
2. Describe how system boot-up processes, operating systems, and system utilities collectively contribute to the performance of a computer. Provide real-world examples to illustrate the significance of each component in the overall functionality of a computer system.
3. Describe the key concepts and tools needed to create a computer network. Discuss about the different types of networks and where they are commonly used. Describe the devices that are part of a network and their purposes. Include descriptions of different network topologies with simple diagrams. Finally, explain why a Network Operating System (NOS) is important and provide some examples of commonly used NOS systems.
4. Explain the fundamental structure of an HTML document and its role as a structured language. Provide examples demonstrating the use of `<html>`,

`<head>`, and `<body>` tags in organising webpage content. Additionally, describe how lists and tables are structured using `<ul>`, `<ol>`, `<li>`, `<table>`, `<tr>`, and `<td>` tags. Also, discuss the use of frames in HTML and their impact on webpage layout.

5. Explain the main features of Gmail, Google Chat, Google Meet, Google Calendar, and Google Drive. Describe how these tools work together in Google Workspace to improve productivity, communication, and teamwork. Provide examples of how they can be used in daily life and work situations.

(1\*15=15)

## **SET II (Analytical)**

1. Explain why both hardware and software are essential for a computer system to function effectively. Use an example, such as typing and printing a document, to illustrate how hardware and software work together to perform a task.
2. Conduct a comparative analysis of General OS, Mobile OS, and Real-Time OS (RTOS). Focus on their design, functionality, and performance in specific use cases such as gaming, mobile communication, and industrial automation.
3. Evaluate the features of an electronic mail system. Discuss the difference between a web-based email system and a regular email application. How do web pages play a role in an email system? Explain their functions and benefits in simple terms.
4. How do Transitional, Strict, and Frameset HTML document types differ, and what are the implications of using each type for web development and browser compatibility?
5. Analyze the importance of the three key elements of computer security: Confidentiality, Integrity, and Availability (CIA). How do these elements work together to protect sensitive data and systems? Provide examples of threats like malware or unauthorized access that can compromise these elements and suggest effective mitigation strategies.

(1\*15=15)



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**ASSIGNMENT QUESTIONS**  
**DATA SCIENCE AND ANALYTICS PROGRAMME**  
**SEMESTER-1**  
**COMPUTATIONAL FOUNDATIONS FOR DATA SCIENCE**  
**B24DS02DC**

**Instructions for Writing Assignments**

- For the descriptive section, use Illustrations and examples to explain
- Use visuals and diagrams effectively to communicate your ideas.
- Support your choices with evidence and justification.
- Attempt anyone questions from each section.

**SET 1 (Descriptive)**

1. Explain the importance of statistics in decision-making. Illustrate real-world examples from healthcare, economics, or business where statistical methods have been used to make critical decisions.
2. Describe the three primary methods of data collection: surveys, experiments, and observational studies. Discuss their advantages, limitations, and provide examples of each technique.
3. Define and differentiate between qualitative and quantitative data. Explain the four levels of measurement (nominal, ordinal, interval, and ratio) and provide examples for each.
4. Explain the concepts of mean, median, and mode as measures of central tendency. Calculate these measures for a given dataset and interpret the results. Discuss when each measure is most appropriate to use.
5. Define the Central Limit Theorem (CLT) and explain its statistical importance. Give an example illustrating how the CLT applies to sample distributions and its practical applications in hypothesis testing and confidence intervals.

## SET II (Analytical)

1. **Given the following data, calculate and interpret the mean, median, and mode:**

Data: 15, 20, 15, 10, 30, 25, 20, 30, 25, 20.

Calculate the dataset's mean, median, and mode and analyse what the values indicate about the distribution.

2. You are surveying students' study habits. The following data was collected on the time spent studying per week for two groups (Group A and Group B):

Group	Less than 5 hours	5-10 hours	10-15 hours	More than 15 hours
Group A	50	30	10	10
Group B	40	35	15	10

Perform a chi-square test for independence to determine whether there is an association between study time and group. Show all steps, including expected frequencies and chi-square statistics.

3. A company is analysing customer satisfaction scores, where scores are rated as poor, average, or excellent. The following contingency table summarizes the survey results for two branches of the company (Branch A and Branch B):

Branch/Rating	Poor	Average	Excellent
Branch A	40	60	100
Branch B	50	70	80

Perform a chi-square test for independence to determine if there is an association between branch and customer satisfaction.

4. **Calculate the variance and standard deviation** for the following dataset:

Data: 8, 12, 15, 10, 18, 9, 11, 14.

Use the formulas for sample variance and standard deviation to compute these measures and interpret the spread of the data.

5. Test the hypothesis that the mean test scores of two independent groups are equal. You are given the following data from two groups of students in a statistics course:

Group A:  $n = 30$ , Mean = 75, Standard Deviation = 10

Group B:  $n = 30$ , Mean = 80, Standard Deviation = 12

Perform a t-test for the difference of means at the 0.05 significance level. State the null and alternative hypotheses, calculate the t-statistic, and interpret the result.

**(1\*15=15)**



**Common Course for All Programmes**  
**Semester I-Language Core**  
**Reading and Writing English**  
**(B21EG01LC)**

**Instructions for Writing Assignments**

**Descriptive**

- *Clearly outline the key elements or aspects that need to be described, such as features, characteristics, or events.*
- *Employ descriptive language that can engage the senses and ensure vivid pictures, enhancing the richness of descriptions.*
- *Organise the assignment in a coherent sequence to guarantee clarity and facilitate the smooth conveyance of ideas.*

**Analytical:**

- *Clearly articulate your main argument in a concise manner at the beginning of your answer. This sets the tone for your analysis and helps the reader understand the central point you are trying to convey.*
- *Support your analysis with specific examples and quotes from the literature .Use direct textual evidence to illustrate and reinforce your points.*
- *Move beyond mere summary and engage in critical analysis .Interpret the significance of the literary elements, such as themes, characters, and symbols.*

**SET 1 (Descriptive)**

1. Explore the significance of non verbal communication as a supplement to verbal communication. Provide examples from daily life and discuss how nonverbal cues such as body language, paralanguage, and gestures enhance or sometimes contradict the verbal messages we convey.
2. Describe in detail Dr. A.P.J. Abdul Kalam's dream and vision for India as depicted in his book *Ignited Minds*.
3. Detail the various parts of speech in English, providing relevant examples to highlight their functions.
4. Investigate how editing contributes to effective communication, particularly for writers using English as a Second Language (ESL). Provide examples from the passage to illustrate the steps involved in the editing process, and discuss how these steps lead to a refined and polished final draft.

5. Write a persuasive essay on the dangers of social media addiction among today's youth.

### **SET II (Analytical)**

1. Analyse how barriers like physical, psychological, and cultural factors can affect the listening process. Provide examples illustrating the impact of these barriers on communication outcomes and discuss strategies to enhance listening skills, fostering more meaningful and productive interactions.
2. How does H.H. Munro employ symbolism in his short story "The Open Window," and what deeper meanings or thematic elements are conveyed through the use of symbolic elements in the narrative?
3. Using apt examples of your choice, discuss the forms and functions of different tenses in English.
4. Analyse the importance of graphical aids, such as tables, graphs, and figures, in enhancing the presentation of information in reports. Consider practical examples and potential challenges in applying the suggested steps to real-world report writing scenarios.
5. Prepare a précis of the following passage and explain the different steps involved:

*There is an enemy beneath our feet—an enemy more deadly for his complete impartiality. He recognizes no national boundaries, and no political parties. Everyone in the world is threatened by him. The enemy is the Earth itself. When an earthquake strike, the world trembles. The power of a quake is greater than anything man himself can produce.*

*But today scientists are directing a great deal of their effort into finding some way of combating earthquakes and, perhaps at some time shortly, mankind will have discovered a means of protecting itself from earthquakes. An earthquake strikes without warning. When it does, its power is immense. If it strikes a modern city, the damage it causes is as great as if it has struck a primitive village. Gas mains burst, explosions are caused and fires are started. Underground railways are wrecked. Buildings collapse, bridges fall, dams burst and gaping crevices appear in busy streets.*

*If the quake strikes at sea, huge tidal waves sweep inland. If it strikes mountain regions, avalanches roar down into the valley. Consider the terrifying statistics from the past 1755: Lisbon, capital of Portugal—the city was destroyed entirely and 450 killed; 1970: Peru—50,000 killed. In 1968, an earthquake struck Alaska. As this is a relatively unpopulated part, only a few people were killed. But this likely was one of the most powerful quakes ever to have hit the world.*

*Geologists estimate that during the tremors, the whole of the state moved over 80 feet farther west into the Pacific Ocean. Imagine the power of something that can move an entire subcontinent! This is the problem that scientists face. They are dealing with forces so immense that man cannot hope to resist them. All that can be done is to try to pinpoint just where the earthquake will strike and work from there. At least some precautionary measures can then be taken to save lives and some property.([https://englishluv.com/examples-of-precis-writing/#google\\_vignette](https://englishluv.com/examples-of-precis-writing/#google_vignette))*

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**COMMON COURSE FOR UG PROGRAMMES**  
**SEMESTER I**  
**ENVIRONMENTAL STUDIES**  
(ABILITY ENHANCEMENT COMPULSORY COURSE)  
**B21ES01AC**

**SET 1 (Descriptive)**

*Each set of Assignments will consist of 5 (five) questions and learners shall choose **any one** from each set. Each Assignment carries 15 marks.*

1. Identify the threats to water resources. Develop a detailed strategy to conserve the water resources.
2. Discuss on the provisions of sustainable development in the scenario of growing population in India.
3. Make a detailed report on major environmental movements in Kerala and comment on its outcomes.
4. What are the different types of forests in India? How can habitat destruction influence biodiversity loss?
5. Give an account on the sources of e-waste. Discuss the measures to reduce the impact of e-wastes on environment.

**(1\*15=15)**

**SET II (Analytical)**

1. Based on the floods in Kerala during 2018 and 2019, prepare a report on the flood affected area nearest your locality. Collect the secondary data to include the social and environmental impacts, in the report. Develop a strategic flood management and mitigation plan for the area mentioned, based on the terrain and population.

2. Identify the types of solid wastes generated in your locality and their sources. Evaluate the solid waste management strategies employed by the authorities in your locality. Identify the challenges and suggest feasible solutions.
3. Prepare a list of endangered mammals in India and add a short note for each. Prepare a report on the conservation strategies implemented by Government of India, since independence till date. Analyse the outcome of the major conservation strategies implemented.
4. Collect the data on any three major environment disasters occurred in Kerala since Independence. Prepare a detailed report on each with regard to the damage on health, environment and economy. Evaluate the status of ecosystem restoration after the occurrence of specified disasters. Comment on the challenges and suggest feasible solutions.
5. “Wetlands are Earth’s kidneys”. Evaluate this statement and record the ecosystem services provide by a wetland area near to your place of residence. Identify the threats faced by the wetland and develop a plan to conserve the ecosystem.

**(1\*15=15)**

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