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Assessment questions

COMPUTER SCIENCE GRADE 8

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# Domain – ICT Fundamentals

## SLO:CS-08-A-01

**Students will be able to analyze the usage of emerging technologies in various walks of life (e.g., Artificial Intelligence, 5G, Robotics, Computer-Assisted translation, 3D and holographic imaging, Virtual Reality, Distributed Applications, Blockchain, and Machine Learning)**

**Cognitive Level: Analysis**

### Formative Assessment

(Marks: 10)

Q. Dear Students, you have the studied of usage of Emerging Technology in different fields and profession like Banks, Hospital, Movies etc. In the following table identify the most appropriate emerging technology for the given scenario and explain its usage and relationship between its different components.

|  |  |  |
| --- | --- | --- |
|  **Emerging Technology** | **Scenario**  | **Identify the appropriate technology, its components, usage, and relationship between different components. Justify with at least two reasons.** |
| Virtual Reality | In 2011, a Japanese nuclear power plant was inspected to observe the damages after an earthquake.  |  |
| Robotics |
| Computer Assisted Translation |

**Scoring Scheme:**

01 mark for identification

02 marks for components

03 marks for relationship

02 marks for each reason

### Summative Question

(Marks: 7)

Q: Suppose you are on a trip of New York, USA where you hired a self-driven / autonomous car for your travelling within the city. These cars are vehicles that are capable of navigating and operating without the need for a human driver. Which one of the following Emerging Technologies will support you more appropriately?

 i. Holographic Imaging

 ii. Global Positioning System (GPS)

 iii. Computer Assisted Translation

 Write down at least two arguments to support your answer and relationship between different components of the identified technology.

**Scoring Scheme:**

01 mark for identification

02 marks for each argument, 02 marks for relationship

## SLO:CS-08-A-02

**Students will be able to identify a network and core networking components and their roles**

**Cognitive Level: Knowledge**

### Formative Assessment

(Marks: 04)

Q. Which network will be used to share while sharing a file from one mobile to another within a room without using Internet. [01 Mark]

Q. Label the communication media for following networks. [03 Marks]

 i.  ii.  iii 

## Summative Question

(Marks: 01)

Q. Identify the component of Satellite Communication from the pictures given below. [01 Mark]

i.  ii. iii.

## SLO:CS-08-A-03

**Students will be able to analyze a network and their roles**

**Cognitive Level: Analysis**

### Formative Assessment

(Marks: 10)

Q: You are facing a problem while sharing a learning material with your friend in school’s computer lab. Analyse the situation and answer the following questions

1. Name the type of network used above scenario? [02 Marks]

2. Which communication device and transmission media is used in this network? [02 Marks]

3. Mention the relationship between communication device and transmission media? [04 Marks]

4. Identify and Troubleshoot the problem?

[02 Marks]

## Summative Question

(Marks: 02)

Q: Which network type requires the collective working of hub, switch, router and NIC? [2 Marks]

1. Personal Area Network (PAN)
2. Local Area Network (LAN)
3. Metropolitan Area Network (MAN)
4. Wide Area Network (WAN)

# Domain – Digital Skills

## SLO: CS-08-B-01

**Student will be able to develop and demonstrate data handling skills [using various software tools e.g., MS Excel, Google Sheets etc.)**

**Cognitive Level: Application**

### Formative Question

(Marks: 10)

Q: You have a data set of Mathematics Marks of 30 students with gender information. You are required to perform the following tasks:

1. Prepare the worksheet and enter the data [1 + 1 Marks]
2. Find the highest marks [2 Marks]
3. Find the lowest marks [2 Marks]
4. Calculate the average marks [2 Marks]
5. Insert the Bar Chart and demonstrate the gender wise average [2 Marks]

## Summative Question

(Marks: 04)

Consider the data given in column A

|  |  |  |
| --- | --- | --- |
|  | **A** | **B** |
| 1 | 35 |  |
| 2 | 31 |  |
| 3 | 25 |  |
| 4 | 22 |  |
| 5 | 15 |  |
| 6 | 12 |  |
| 7 | 09 |  |

Fill the **Column B** with a word “Hot Day” or “Cool Day” using IF formula. If the value of **Column A** exceeds 20 results in **Column B** shall be “Hot Day” otherwise it shows “Cool Day”.

1. Follow proper syntax of the **IF** formula and print the result for all the values of **Column A**
2. Use **Bar Chart** to depict the result in chart

**Scoring Scheme:**

01 Mark for using formula
02 Marks for using Bar Chart
01 Correct Results showing in Column B

# Domain – Algorithmic Thinking and Problem Solving

## SLO: CS-08-C-01

**Students will be able to apply the concepts of computational thinking and problem-solving strategies to solve complex problems by identifying the most efficient algorithm**

**Cognitive Level: Application**

### Formative Question

(Marks: 12)

Q: Develop two different algorithms to find the sum of first 10 integers. Identify the efficiency of algorithm based on number of steps used and computational resources (CPU)

**Scoring Scheme:**

03 marks for each algorithm

03 marks for each identification

### Summative Question

(Marks: 06)

Q: Calculate the efficiency of following two given algorithms.

|  |  |
| --- | --- |
| **Algorithm 1**Step 1 – Start the process Step 2 – get the input N = 4 Step 3 – calculate the square by multiplying the input value i.e., square ← Power (N)Step 4 – display the result square Step 5 – stop | **Algorithm 2**Step 1 – Start the process Step 2 – get the input N = 4Step 3 – calculate the square by multiplying the input value i.e., square ← N + N + N + NStep 4 – display the result square Step 5 – stop |
| Calculate the followings: 1. Number of steps involved in above mentioned algorithms. [2 marks] 2. Number of calculations involved in above mentioned algorithms. [2 marks] 3. Identify the efficient algorithm [2 marks] |

## SLO: CS-08-C-02

**Students will be able to apply the concepts of nesting in algorithmic design thinking**

**Cognitive Level: Application**

### Formative Question

(Marks: 20)

Q: Apply the concept of nesting in designing of algorithm for the following.

1. Develop an algorithm to draw the following pattern using nested loop. [Marks: 10]

\* \* \* \* \* \*

\* \* \* \* \* \*

\* \* \* \* \* \*

**Scoring Scheme:**

01 mark for variables

01 mark for sequence of steps

03 marks for each loop

02 marks for correct pattern display

1. Develop an algorithm to find the largest number. Input three numbers by user and find the result by comparing them using nested IF-ELSE statements. [Marks: 10]

**Scoring Scheme:**

01 mark for input
01 mark for sequence of steps
03 marks for each IF statement
02 marks for correct output

### Summative Question

(Marks: 06)

Q: Develop an algorithm to find the grade of the student. Input the obtained marks in percentage and find the grade according to the given criteria.



**Scoring Scheme:**

01 mark for input
01 mark for sequence of steps
01 mark for each IF-ELSE statement | Maximum 3 marks 01 marks for correct output

# Domain – Programming

## SLO: CS-08-D-01

**Student will be able to apply intermediate-level programming constructs (e.g., functions, cloning, conditional movement); by creating mini-games using a visual programming tool.**

**Cognitive Level: Application**

### Formative Question

(Marks: 10)

Q: Develop a catch game in Scratch. You are required to perform the following five steps

1. Move the catcher (Any object, use arrow keys for movement)
2. Go to the top (Use any ball, apple etc.)
3. Fall (If ball falls decrease the score if it goes up increase the score)
4. Catch it (On catching extra 5 score is allotted and reset the ball to the top random position)
5. Keep the score (Use a variable which holds the score)

**Scoring Scheme:**

## 02 Marks for each step

## Summative Question

(Marks: 05)

Q: Write down the Scratch code you dragged to animate each letter of your name and add sound in the background.

**Scoring Scheme:**

1 Mark for character
2 Marks for animation
2 Marks for sound

## SLO: CS-08-D-Add

**Student will be able to apply intermediate-level programming constructs (e.g., functions, cloning, conditional movement); by creating mini-games using a textual programming tool.**

**Cognitive Level: Application**

### Formative Question

(Marks: 12)

Q: Develop a python program which prints the following number series

1. **1, 3, 5, 7, 9, 11….99 [4 marks]**
2. **2,4,6,8,10…….100 [4 marks]**
3. **2, 4, 16, 256….65536 [4 marks]**

**Scoring Scheme:**

1 mark for correct syntax and structure
2 marks for loop
1 mark for correct result

## Summative Question

(Marks: 05)

Q: Generate the following output in Python using nested loop.

5 4 3 2 1

5 4 3 2

5 4 3

5 4

5

**Scoring Scheme:**

1 mark for correct syntax and structure
2 marks for nested loop
2 marks for setting the result pattern

# Domain – Digital Citizenship

## SLO: CS-08-E-01

**Student will identify ways of protecting against cybercrimes**

**Cognitive Level: Knowledge**

### Formative Question

(Marks: 10)

Q: Write down any ten ways of prevention from cybercrimes. You may use Google/Internet or any other source for your help.

**Scoring Scheme:**

### 1 Mark for each prevention

### Summative Question

(Marks: 04)

Q: Name any three software applications used to check Plagiarism.

Q: Which one of the following is not used to check Plagiarism.

1. Turnitin B. ProWritingAid C. Unicheck D. Moodle

**Scoring Scheme:**

1 Mark for each name

1 Mark for correct option

# Domain – Entrepreneurship in Digital Age

## SLO: CS-08-F-01

**Students will develop an understanding of the basics of digital marketing platforms and social media marketing to develop a marketing plan for a business**

**Cognitive Level: Understanding**

### Formative Question

(Marks: 09)

Q: Give one example of each Digital Marketing type i.e., Search Engine Optimization, Social Media Marketing and Email Marketing. You may use Google/Internet or any other source for your help.

**Scoring Scheme:**

1 Mark for each example

Q: You are required to suggested best suited digital marketing type for an entrepreneur of café shop., Give at least two reasons to support your selection.
 **Scoring Scheme:**

1 Mark for selection

2 Marks for each reasoning

### Summative Question

(Marks 10)

Q: Name any five digital marketing platforms.

**Scoring Scheme:**

1 Mark for each platform

Q: Differentiate between Email Marketing and Social Media Marketing. Write down any three differences between them.

**Scoring Scheme:**

01 Mark for each difference

Q: Which one of the following is the fundamental component of Digital Marketing.

1. Search Engine Optimization (SEO) B. Debit Cards C. Credit Cards D. Transaction

**Scoring Scheme:**
02 Marks for correct option

## SLO: CS-08-F-02

**Students will be able to identify and create different components of a business plan i.e., market need, product design, costing, operations, and marketing**

**Cognitive Level: Synthesis**

### Formative Question

(Marks: 15)

Q: Students are divided into small groups, five students in each group and asked them to develop business plan to start a new business of educational institution. Each group need to cover the following components i.e., i) market need ii) product design iii) costing iv) operations v) marketing

**Scoring Scheme:**

03 marks for each of five elements of plan

## Summative Question

(Marks: 10)

Q: Create a business plan of following scenario. Business plan should include Market Need, Product Design, Costing, Operations and Marketing sections.

**Scenario:** You want to sell and deliver fresh fruits online using a drone technology

**Scoring Scheme:**

2 mark for each of section