CLASS: XI

Give long answers to the following extended response questions:

Q:1 Simplify the following Boolean functions using k-map method:

E1=A'B'C'+A'BC'+AB'C'+AB'C+ABC'

E2=A'B+AB+AB'

Q:2 Imagine you are responsible for cyber security of a large organization. Describe a comprehensive cybersecurity strategy that includes multiple layers of defense against various threats.

Q:3 Discuss how AI could impact the healthcare sector from a business stakeholder's viewpoint.

Q:4 Imagine a smart city where traffic lights, waste management systems, and public transportation are all connected through IoT devices. Blockchain technology is used to ensure the data integrity of these systems, while AI helps in optimizing traffic flow and waste collection routes.

Questions:

1.Explain how IoT, block chain, and AI interact in this smart city scenario.

2. Identify at least two stakeholders in this smart city system and discuss their interests.

3. What challenges might arise when integrating IoT and block chain in such a system, and how can they be overcome?

Q:5 If you have to conduct a qualitative interview, which five steps would you necessarily follow? Give reasons for your selection.

Q:6 Analyze the ways via which increased connectivity impacts the computing, affecting various culture & societies, Critically evaluate the potential positive & negative human impacts ,such as changes in social behavior, privacy concerns & the digital divide.

Q:7 Imagine you are researching a controversial topic online,In what ways ,would you undertake the encountered information sources, Identifying & verifying the reliability .Determine the steps you would take to ensure safe & responsible use of these sources in your research.

Q:8 In the context of cloud computing, elaborate on the concepts of scalability & reliability. How do these concepts contribute to the effectiveness of cloud services? Provide a real world example.

Q:9 Compare & Contrast the waterfall model & agile in software development .Which one do you think is more suitable for modern software development,& why.

Q:10 Determine the ways via which you will ensure that the information you collect is accurate & unbiased?

Give long answers to the following extended response questions:

Write a Python program using the `turtle` library to draw a concentric circle. Explain each step of your program.

1. Explain debugging techniques in Python. Discuss the use of `print()` statements, `assert`, and the `pdb` debugger for troubleshooting your Python code.
2. Sketch primary data collection methods in context of disease outbreak, like seasonal flu.
3. Explain in detail about principal of experimental design.
4. Explain the concept of a flowchart & its significance in problem solving.
5. Develop n algorithm that takes length in inches as input & convert it into centimeters.
6. Explain the working of K-means clustering.
7. A newly developed algorithm needs to be tested. Argue about the reasons.
8. Write code to print the multiplication of first 10 odd numbers & first 10 even numbers & find the difference of the two.
9. Explain the application of python in different business & technical domains.

10. Explain the forces that are driving the growth of entrepreneurship.
11. Describe the important role that small business play in our nation's enconomy.

LONG QUESTIONS

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