AGA KHAN UNIVERSITY EXAMINATION BOARD

HIGHER SECONDARY SCHOOL CERTIFICATE

CLASS XI

MODEL EXAMINATION PAPER 2026 AND ONWARDS

Computer Science Paper II

Time: 1 hour 30 minutes Marks: 35

INSTRUCTIONS

Please read the following instructions carefully.

1. Check your name and school information. Sign if it is accurate.

I agree that this is my name and school. **Candidate's Signature**

RUBRIC

2. There are NINE questions. Answer ALL questions. Questions 8 and 9 each offer TWO choices. Attempt any ONE choice from each.

3. When answering the questions:

   Read each question carefully.
   Use a black pointer to write your answers. DO NOT write your answers in pencil.
   Use a black pencil for diagrams. DO NOT use coloured pencils.
   DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
   Complete your answer in the allocated space only. DO NOT write outside the answer box.

4. The marks for the questions are shown in brackets ( ).

5. You may use a scientific calculator if you wish.

Q.1. (Total 3 Marks)

A school is developing a customised school management and information system (SMIS) to handle students' records, attendance, and fee processing. Instead of buying and maintaining physical servers, the school decides to deploy the system on a cloud platform that handles all the infrastructure and scaling automatically, allowing developers to focus only on coding and testing the application.

i. Identify the cloud computing service model used in this case. (1 Mark)

ii. Explain your answer with a reason and provide one relevant real-world example. (2 Marks)

Q.2. (Total 3 Marks)

Fatima is a computer lab operator at school. She notices that students often download files from untrusted websites, use weak passwords, and leave their devices unattended. Recently, one of the school computer was infected with ransomware, which encrypted important student records.

With respect to the given scenario, suggest any THREE effective cybersecurity measures that Fatima should implement to enhance the school's digital security.

Q.3. (Total 3 Marks)

i. Explain the relationship between cryptography and encryption. (2 Marks)

ii. How are cryptography and encryption different, yet work together in securing digital communication? Provide an example. (1 Mark)

Q.4. (Total 3 Marks)

Write an algorithm to search for the number 10 in the list [5, 10, 15, 20].

Q.5. (Total 3 Marks)

Differentiate between syntax and semantics in programming. Provide one example of each to support your answer.

Q.6. (Total 3 Marks)

Write a Python program that takes a temperature value in °C as input and displays the temperature as Cold (≤15), Moderate (16–30), or Hot (>30) using if-elif-else.

Q.7. (Total 3 Marks)

A bank uses a statistical model to evaluate customers applying for loans. The model considers the applicants' income, age, previous loan history, and spending behaviour to predict the chance of loan repayment.

i. Analyse the effectiveness of this statistical model in helping the bank to consider loan applications. (1 Mark)

ii. Write any ONE advantage and any ONE possible limitation of using the model in the given situation. (2 Marks)

Q.8. (Total 7 Marks)

EITHER

a.

i. The following Python code is intended to print numbers from 1 to 5, but it contains errors. Identify and rewrite the correct code to make it work as intended. (3 Marks)

```
for i in range(1,5)
    print i
```

ii. Write a Python program using nested for loops to print the following number pattern: (4 Marks)

4321
432
43
1

OR

b. Write a program to develop a basic billing system for a grocery store that (7 Marks)

i. takes the price and quantity of two different items from the user.
ii. calculates the total cost for each item and the grand total.
iii. applies a 10% discount if the grand total is more than Rs 1000.
iv. displays all calculated values.
v. compares and displays the item that is more expensive based on the total cost.

Q.9. (Total 7 Marks)

EITHER

a. Hospitals often struggle to monitor patients with chronic conditions after discharge. Unnoticed symptoms and late interventions can lead to rehospitalisation and poor health outcomes.

i. Examine that the Internet of Things (IoT) contributes to solving the challenge of post-discharge patient monitoring in the healthcare sector. (2 Marks)

ii. Analyse that the continuous patient monitoring through IoT improves healthcare outcomes. Mention specific IoT devices and the types of data they collect. (3 Marks)

iii. How IoT-generated data helps healthcare providers make timely and effective decisions to reduce risks by using a real or hypothetical example? (2 Marks)

OR

b.

i. Analyse the environmental consequences of increased connectivity through any TWO positive and any TWO negative impacts. (4 Marks)

ii. Support your analysis with any TWO real or hypothetical examples. (2 Marks)

iii. Suggest the responsible use of cloud computing and smart devices in reducing environmental harm. (1 Mark)

END OF PAPER

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