**AGA KHAN UNIVERSITY EXAMINATION BOARD**

**HIGHER SECONDARY SCHOOL CERTIFICATE**

**CLASS XII**

**ANNUAL EXAMINATIONS (THEORY) 2023**

**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 EIGHT questions. Answer ALL questions. Question 7 and 8 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)

Differentiate between process and thread.

|  | **Process** | **Thread** |
|---|---|---|
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |

Q.2. (Total 3 Marks)

Write THREE main objectives of System Development Life Cycle (SDLC).

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Q.3. (Total 5 Marks)

Describe the purpose of each of the given header files.

| Header file | Purpose |
|---|---|
| iostream.h | |
| string.h | |
| math.h | |
| iomanip.h | |
| time.h | |

Q.4. (Total 3 Marks)

Differentiate between while loop and do while loop statement.

| | while loop | do while loop |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

PLEASE TURN OVER THE PAGE

Q.5. (Total 4 Marks)

Complete the given C++ code to create an object and call the member function using object oriented programming.

```cpp
#include <iostream>
using namespace std;
class Animal {
  public:
   void eat() {
      cout << "I can eat!" << endl;
   }
   void sleep() {
      cout << "I can sleep!" << endl;
   }
};
class Dog : public Animal {
  public:
   void bark() {
      cout << "I can bark! Woof woof!!" << endl;
   }
};
int main() {
   // Create object of the Dog class



   // Calling members of the base class




   // Calling member of the derived class


   return 0;
}
```

Q.6. (Total 3 Marks)

Describe each of the given modes of opening a file.

| Modes | Description |
|-------|-------------|
| ios::out | |
| ios::ate | |
| ios::trunc | |

Q.7. (Total 7 Marks)

**EITHER**

a. Write a C++ program to check whether an inputted alphabet is upper case or lower case.

**OR**

b. Write a C++ program to display n terms of natural numbers and their sum.

Q.8. (Total 7 Marks)

**EITHER**

a. Write a C++ program that reverses an inputted string of 10 alphabets and prints it on the screen.

**OR**

b. Write a C++ program using user-defined function that takes three numbers as an input and print their mean.

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END OF PAPER

# Please use this page for rough work