2920/203

OBJECT ORIENTED PROGRAMMING

November 2018 Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

MODULE II

OBJECT ORIENTED PROGRAMMING

3 hours

INSTRUCTIONS TO CANDIDATES

This paper consists of EIGHT questions.

Answer any FIVE of the EIGHT questions in the answer booklet provided.

All questions carry equal marks.

Candidates should answer the questions in English.

This paper consists of 6 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.



- Outline three differences between Object Oriented paradigm and Procedural programming paradigm.
 - (6 marks)
- (b) Describe an Identifier citing the rules followed to create it in C++ programming language. (4 marks)
- (c) Distinguish between state and behaviour of an object as used in Object Oriented Programming. (4 marks)
- (d), Write a C++ program that prompts the user to enter an integer x from the keyboard and displays the result when the integer is multiplied by 2. The output should display the following on the screen.

Output:

Please enter an integer value:

Value you entered is and its result is .

لحن (6 marks)

 Table 1 shows C++ programming language escape sequences. State the purpose of each. (2 marks)

•	Escape sequence
(i)	/m
(ii)	\f

Table 1



- (b) Explain each of the following data types as used in C++ programming language:
 - (i) typedef;
 - (ii) enumerated datatype:
 - (iii) reference.

(6 marks)

- (c) Outline the role of each the following keywords in a switch case control structure:
 - break;
 - (ii) default.

(4 marks)

- (d) With the aid of syntax code, explain each of the following as used in C++ programming:
 - (i) namespace;
 - (ii) pure virtual functions.

(8 marks)

13.

(a) State four characteristics of a C++ static member function.

(4 marks)

(b) With the aid of a syntax code, explain the C++ goto control structure.

(4 marks)

- (c) Distinguish between the following pairs of pointer functions in C++:
 - (i) seekg and seekp;
 - (ii) tellg and tellp.

(4 marks)

```
(d)
A C++ class is defined with the following code:
 class PUBLISHER
                                           Pula
       char Pub[12];
       double Turnover;
 protected:
        void Register();
 public:
       PUBLISHER();
      · void Enter();
      void Display();
        1:
              class BRANCH
                     char CITY[20];
              protected: float Employees;
              public: BRANCHO:
                   void Haveit();
                   · void Giveit();
       class AUTHOR: private BRANCH, public PUBMSHER
              int Acode;
              char Aname[20];
              float Amount;
              public: AUTHOR(
               void Start();
              void Show();
       1;
       Write four names of member functions which are accessible from objects
       belonging to class AUTHOR.
                                                                         (4 marks)
(ii)
       Write four names of data members which are accessible from the class
```

(a) State four areas where array datatype may be used.

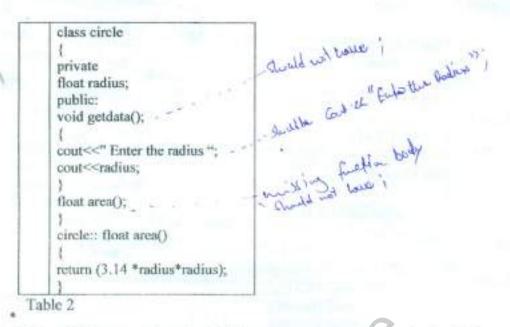
AUTHOR.

(4 marks)

(4 marks)

Table 2 shows a C++ program code segment. Identify four errors in the code. (b)

(4 marks)

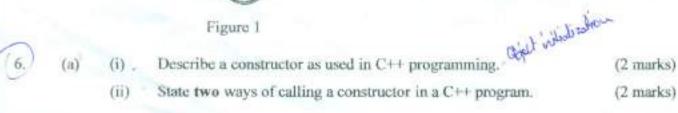


Write a C++ program function that inserts an element at a desired point in an array B. (c) (8 marks)

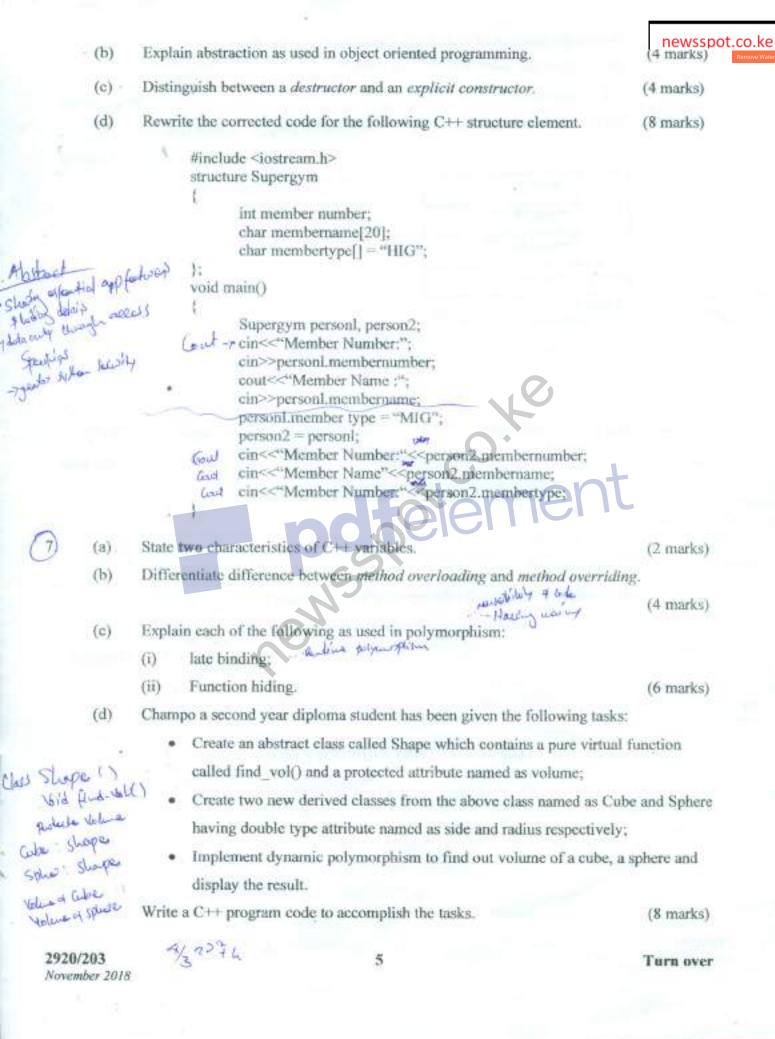
(d) Given an array A [6][16] whose base address is 100. Determine the location A [2][5] if each element occupies 4 bytes and the array is stored row wise. (4 marks)

- 5. Outline two rules followed when inheriting constructor (a) (2 marks)
 - (b) State four characteristics of the friend function. (4 marks)
 - Explain the role of a mutable class member in C++ programming. (c) (4 marks)
 - Distinguish between ISA and HASA class relationships. (i) (d) (4 marks)
 - Figure 1 shows a representation of a type of inheritance between base classes A, (ii) B and a derived class C:
 - identify the type of inheritance; Multiple hat here (I)
 - (II) Write a C++ syntax code to implement the inheritance. (6 marks)





(ii) (2 marks)



(ii)

(4 marks)

Table 3 shows string functions in C++. Outline the purpose of each function (b)

(3 marks)

	function
(i)	strcat(S1, S2)
(ii)	strepy(S1, S2)
(iii)	strupr(s)

Table 3

- (c) Write a C++ function to count the number of words in a text file named "OUT.TXT", (www. (3) (8 marks)
- A C++ program segment is represented as follows: (d) int e, d; cin>>e;

d=(c<10)?-1:((c>16)-21:0)

cout<<d;

(i)

- draw a test table for the inputs when c = -10 and 5;
- (ii) rewrite the code using if else statements.

(5 marks)