

1. **Nov/2021//Paper\_31/No.2**

Draw **one** line from each programming paradigm to its **most appropriate** description.

**Programming paradigm**

**Description**



Programs using the instruction set of a processor

Programs based on events such as user actions or sensor outputs

Programs using the concepts of class, inheritance, encapsulation and polymorphism

Programs with an explicit sequence of commands that update the program state, with or without procedure calls

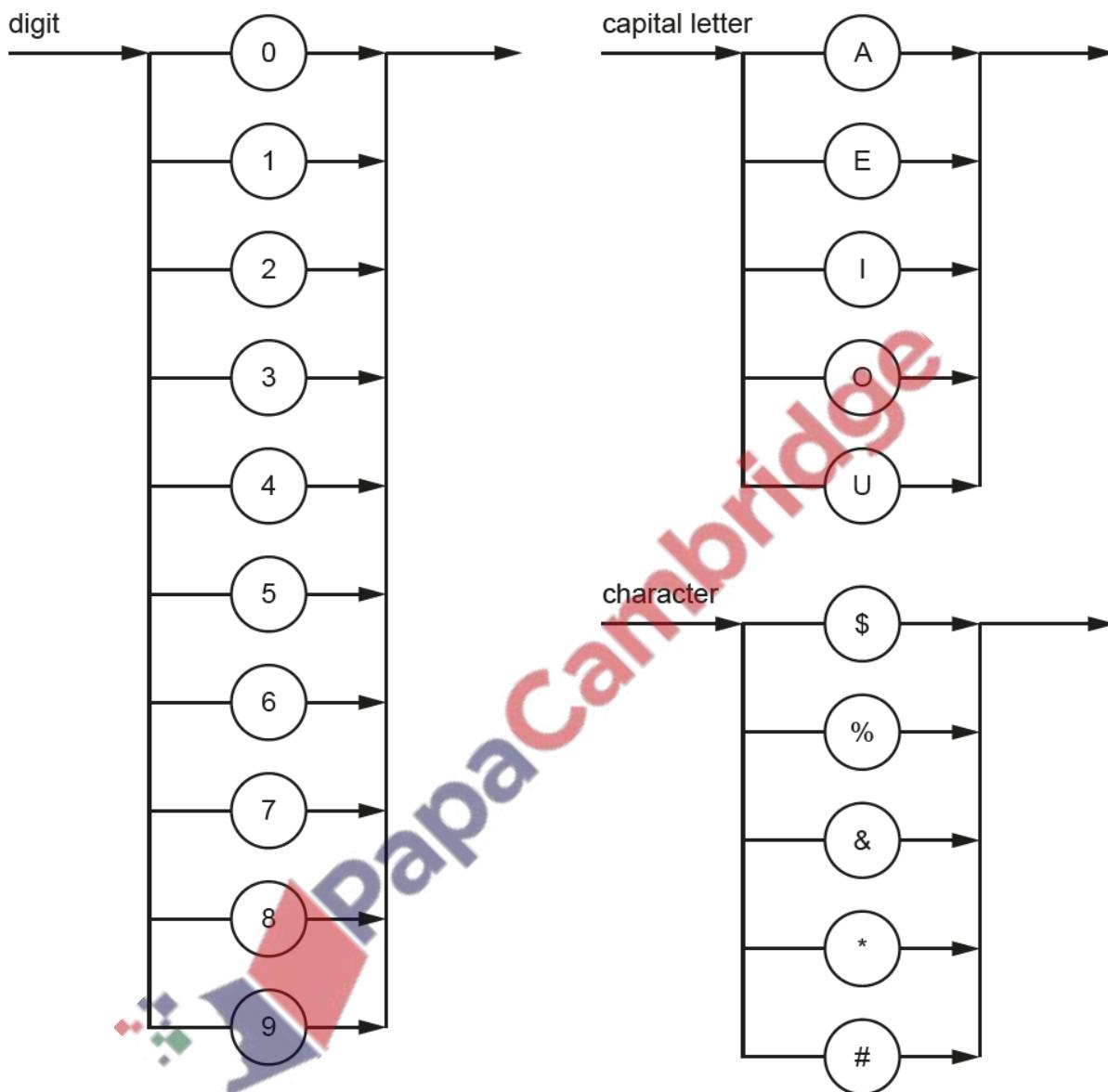
Programs that specify the desired result rather than how to get to it

[4]



The following syntax diagrams for a particular programming language show the syntax of:

- a digit
- a capital letter
- a character.



(a) Write the Backus-Naur Form (BNF) notation of the syntax diagram for character.

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[2]

(a) Describe what is meant by an **imperative (procedural)** programming language.

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 .....  
 .....  
 ..... [2]

(b) Describe what is meant by a **declarative** programming language.

.....  
 .....  
 .....  
 ..... [2]

(c) Identify the programming paradigm for each of these program code examples.

Program code example	Programming paradigm
<pre>male(john). female(ethel). parent(john, ethel).</pre>	
<pre>FOR Counter = 1 TO 20   X = X * Counter NEXT Counter</pre>	
<pre>Start: LDD Counter       INC ACC       STO Counter</pre>	
<pre>public class Vehicle {     private speed;     public Vehicle()     {         speed = 0;     } }</pre>	

[4]