

## Question 1: 4 Points

Match the programming languages with their application domain. Each language should not be used more than once.

Programming	Topics	Matched Pair
A) COBOL	1) Artificial Intelligence	
B) LISP	2) Internet programming	
C) Java	3) Scientific applications	
D) FORTRAN	4) Business applications	

## Question 2: 6 Points

Explain the following concepts with examples:

(a) Extensibility

(b) Restrictability

(c) Operator overloading

### Question 3: 8 Points

Consider the below fragment of C code, and assume that the program runs despite the absence of the tiny details of its syntactic requirement. Each integer type variable takes 5 bytes of space. You are allowed to have 50 bytes of space to store variables when this C program is executed. Do you think that 50 bytes are sufficient? Explain.

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```
{
  int w, x, y, z;
  ...
  {
    int p, q;
    ...
    {
      int r;
      ...
    }
    ...
  }
  ...
  {
    int s, t, u;
    ...
  }
  ...
}
```

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### Question 4: 4 Points

- (a) Availability of recursion in a programming language increases its expressiveness. True or False
  
- (b) Who did design the first ever compiler?
  
- (c) State a difference between Byte-code and assembly language code.