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Courses » Design and pedagogy of the introductory programming course

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## Unit 4 - Week 3

### Course outline

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- Lecture 12 : Pedagogy.0: Introduction and basic principles
- Lecture 13 : Pedagogy.1: Scaffolding, Lesson Plan
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### Assignment 3

**The due date for submitting this assignment has passed.****As per our records you have not submitted this assignment. Due on 2018-09-19, 23:59 IST.**

Assignment 3

1) Which of the following is false **1 point**

Students learn because it will help them pass examinations which will help them get a degree.

Students learn because they have been asked to do so by their teachers and parents.

We should not bother to tell students why we are teaching them a certain topic because they do not have the knowledge to understand.

Students learn because they are curious about how the world works; they are seeking answers to questions about what they see around them.

**No, the answer is incorrect.****Score: 0****Accepted Answers:***We should not bother to tell students why we are teaching them a certain topic because they do not have the knowledge to understand.*2) Which of the following is not a reason to use turtle graphics in the first lecture of introductory programming? **1 point**

Turtle graphics is a very interesting software, and students should know about interesting software.

Turtle graphics enables students to do something they might like and thus attracts students to programming

Turtle graphics requires students to identify patterns in the picture to be drawn, and this is good practice for programming

Turtle graphics enables students to write programs from the first day, which is otherwise not

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Week 4

3) What does the following code draw on the screen?

0 points

```
right(90)
repeat(100){forward(1); right(3.6);}
repeat(100)(forward(1); left(3.6);)
```

- It draws a figure resembling the digit 8.
- It draws two concentric circles
- It draws one circle, and then draws over it again
- It draws a figure resembling the symbol for infinity

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*It draws a figure resembling the symbol for infinity*

4) Which of the following is a valid argument for explaining the working of a computer using metaphors rather than stating at a high level what happens in computer hardware? **1 point**

- Students have great difficulty understanding binary numbers
- Students have learned nothing about electrical circuits when they enter college and it is too difficult to tell them everything
- We can take care to ensure that the metaphors we use will not be misunderstood, and explicitly discuss what are wrong interpretations
- Students have more fun imagining a computer as an unintelligent human being who has to be told every little thing

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*We can take care to ensure that the metaphors we use will not be misunderstood, and explicitly discuss what are wrong interpretations*

5) Which figure can you not draw no matter what values are typed in as input in the following code? **1 point**

```
double times,angle;
repeat(times){forward(1); right(angle)}
```

- ellipse
- decagon
- quarter circle
- straight line

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*ellipse*

6) Which of the following is false? **1 point**

- A while statement can be replaced by a for statement having the same effect

- A repeat statement can be replaced by an if statement having the same effect
- A while statement with a break inside it can be rewritten using a while statement without a break but with some additional (non looping) code
- If no variable can be considered a "control variable" it is better to use a while loop rather than a for loop

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*A repeat statement can be replaced by an if statement having the same effect*

7) Which of the following is false?

**1 point**

- When a function call executes a new activation frame is created
- A function should be used if you need same action to be performed in many places in your code
- A large program should be broken up into small functions so as to make it easier to understand
- The compiler checks if a function is recursive and then decides whether an activation frame is to be created when it is called

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*The compiler checks if a function is recursive and then decides whether an activation frame is to be created when it is called*

8) Which of the following is false?

**1 point**

- An array can be used to store a set of values of the same type
- An array can be used to store a sequence of values of the same type
- An array can be used to compute a histogram very efficiently
- An array can be used to store a set of values of different types

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*An array can be used to store a set of values of different types*

9) Which of the following is false?

**1 point**

- Structures and classes in C++ are essentially the same
- Structures and arrays are passed to functions in a similar manner
- Structures and arrays can hold multiple integer values if we want
- If we need to represent a certain entity, it is better to create a structure to hold the data related to the entity

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Structures and arrays are passed to functions in a similar manner*

10) Which of the following is false?

**1 point**

- Activation frames are part of the heap memory
- An object allocated in the heap memory does not get deallocated automatically when control

returns from a function call

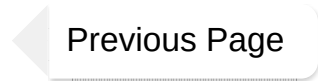
- The new operator of C++ is safer than malloc of C because the former allocates memory for a certain type and returns a pointer to that type
- A standard library vector is more efficient than a linked list if you only need to append and refer to the  $i$ th element

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Activation frames are part of the heap memory*

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