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NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » Compiler Design (course)

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Week 10 : Assignment 10

The due date for submitting this assignment has passed.

Due on 2025-04-02, 23:59 IST.

Assignment submitted on 2025-03-22, 22:06 IST

1) Which of the following is NOT possible to realize if activation record is static   **1 point**

- ○ (A) Passing parameters
- ○ (B) Creating local variables
- ● (C) Supporting recursion
- ○ (D) None of the other options

Yes, the answer is correct.
Score: 1

Accepted Answers:
(C) Supporting recursion

2) Control link points to the   **1 point**

- ○ (A) Current activation record
- ● (B) Parent activation record
- ○ (C) Child activation record
- ○ (D) None of the other options

Yes, the answer is correct.
Score: 1

Accepted Answers:
(B) Parent activation record

3) Intermediate code generation for a compiler is   **1 point**

- ○ (A) Must
- ● (B) Optional

○ (C) Depends on language

○ (D) None of the other options

Yes, the answer is correct.
Score: 1
Accepted Answers:
(B) Optional

4) P-code is used for   *1 point*

  ⦿ (A) Stack-based machine

  ○ (B) Accumulator based machine

  ○ (C) Two operand addresses

  ○ (D) None of the other options

Yes, the answer is correct.
Score: 1
Accepted Answers:
(A) Stack-based machine

5) In the activation record, local variables can be accessed from frame pointer with   *1 point*
offset value

  ○ (A) Positive

  ⦿ (B) Negative

  ○ (C) May be positive or negative

  ○ (D) Cannot be accessed

Yes, the answer is correct.
Score: 1
Accepted Answers:
(B) Negative

6) Access link points to the   *1 point*

  ○ (A) Current activation record

  ○ (B) Parent activation record

  ○ (C) Child activation record

  ⦿ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(B) Parent activation record

7) If pointer is supported in the high-level language,   *1 point*

  ⦿ (A) Must also be supported in the intermediate language

  ○ (B) May not be supported in the intermediate language

  ○ (C) Depends on language

  ○ (D) None of the other options

No, the answer is incorrect.

Score: 0
Accepted Answers:
(B) May not be supported in the intermediate language

8) Frame pointer points to the   *1 point*

    ◉ (A) Current activation record

    ○ (B) Parent activation record

    ○ (C) Child activation record

    ○ (D) None of the other options

Yes, the answer is correct.
Score: 1
Accepted Answers:
(A) Current activation record

9) "Display" helps to locate easily   *1 point*

    ○ (A) Local variables

    ○ (B) Global variables

    ◉ (C) Non-local variables

    ○ (D) All of the other options

Yes, the answer is correct.
Score: 1
Accepted Answers:
(C) Non-local variables

10) An intermediate language should be   *1 point*

    ○ (A) Close to target machine

    ○ (B) Machine independent

    ○ (C) All operators of high-level language supported

    ◉ (D) All of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(B) Machine independent

11)   *1 point*

Which of the following is a key purpose of the stack pointer in an activation record?

(A) To store the base address of the current function
(B) To manage dynamic memory allocation
(C) To track the top of the runtime stack
(D) To store global variables

    ○ (A)

    ○ (B)

    ◉ (C)

    ○ (D)

Yes, the answer is correct.
Score: 1

Accepted Answers:

(C)

12)   ***1 point***

What happens if recursion is attempted in a system with a static activation record?

(A) It executes successfully but inefficiently
(B) It results in incorrect execution since previous function calls get overwritten
(C) It executes normally without issues
(D) It leads to infinite recursion by default

- ○ (A)
- ◉ (B)
- ○ (C)
- ○ (D)

Yes, the answer is correct.
Score: 1

Accepted Answers:

(B)

13)   ***1 point***

What is the primary advantage of using intermediate code in a compiler?

(A) It simplifies code generation for multiple target machines
(B) It improves the execution speed of the compiled program
(C) It eliminates the need for optimization
(D) It ensures that all high-level language features are directly mapped to assembly

- ◉ (A)
- ○ (B)
- ○ (C)
- ○ (D)

Yes, the answer is correct.
Score: 1

Accepted Answers:

(A)