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

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Course outline

About NPTEL ()

How does an NPTEL online course work? ()

Week 0 : ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

Week 11 : Assignment 11

The due date for submitting this assignment has passed.

Due on 2025-04-09, 23:59 IST.

Assignment submitted on 2025-04-07, 10:41 IST

1) ***1 point***

For the rule S → L := E, if L is a single variable, L.place is equal to

(A) Null
(B) Some value
(C) Constant
(D) None of the other options

- (A)
- (B)
- (C)
- (D)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(B)

2) For Boolean variable B, B.truelist contains ***1 point***

- (A) List of locations at which B is true
- (B) List of locations to jump to if B is true
- (C) List of locations at which B is true and the locations to branch to
- (D) None of the other options

Yes, the answer is correct.

Score: 1

Accepted Answers:

(A) List of locations at which B is true

3) ***1 point***

When generating code for the Boolean expression "(x ≥ y) AND (p ≠ q)", which locations are left for back patching?

a) Falselist of x≥y
b) Falselist of x≥y and falselist of p ≠ q
c) Falselist of x≥y, falselist of p ≠ q, truelist of p ≠ q
d) Truelist of x≥y, falselist of x≥y, truelist of p ≠ q, falselist of p ≠ q

- (A)
- (B) ◉
- (C)
- (D)

Yes, the answer is correct.
Score: 1

Accepted Answers:

(B)

4) In three-address code, arrays are ***1 point***

(A) Not supported
(B) One dimensional
(C) More than one dimensional
(D) Supported via pointers

- (A)
- (B) ◉
- (C)
- (D)

No, the answer is incorrect.
Score: 0

Accepted Answers:

(C)

5) For three address code generation of “B → B1 or M B2”, M.quad is used to backpatch ***1 point***

- (A) B1.truelist
- (B) B1.falselist ◉
- (C) B2.truelist
- (D) B2.falselist

Yes, the answer is correct.
Score: 1

Accepted Answers:

(B) B1.falselist

6) For the rule B → B1 and B2, the operation "B1.false = B.false" requires two passes as ***1 point***

- (A) B1.false is not known
- (B) B.false is not known
- (C) Both B1.false and B.false are unknown
- (D) None of the other options

Yes, the answer is correct.
Score: 1
Accepted Answers:
(B) B.false is not known

7) ***1 point***

In the rule $C \rightarrow C1$ AND NC_2 the non terminal N is used to remember the start address of:

(A) C
(B) C_1
(C) Both C_1 and C
(D) None of the other options

- (A)
- (B)
- (C)
- (D)

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

8) In the rule S → if B then M S N else M S, N is used to generate a jump after ***1 point***

- (A) then-part
- (B) else-part
- (C) both then- and else-part
- (D) None of the other options

Yes, the answer is correct.
Score: 1
Accepted Answers:
(A) then-part

9) In the rule S →if B then M S1, M holds the start address for ***1 point***

- (A) S1
- (B) S
- (C) B
- (D) None of the other options

Yes, the answer is correct.
Score: 1
Accepted Answers:
(A) S1

10) For three address code generation of rule “S → while M1 B do M2 S1”, B.falselist is backpatched with ***1 point***

- (A) M1.quad
- (B) M2.quad
- (C) Cannot be backpatched at this point
- (D) None of the other options

Yes, the answer is correct.
Score: 1

Accepted Answers:
(C) Cannot be backpatched at this point

11) ***1 point***

In three-address code (TAC), accessing an array element typically requires:

(A) Direct assignment without indexing
(B) Computing an address using the base address and an offset
(C) Using only registers without memory references
(D) None of the other options

- (A)
- (B)
- (C)
- (D)

Yes, the answer is correct.
Score: 1

Accepted Answers:
(B)

12) ***1 point***

In the rule S → while M1 B do M2 S1, the non-terminal M2 is used to remember the start address of:

(A) S
(B) B
(C) S1
(D) None of the other options

- (A)
- (B)
- (C)
- (D)

Yes, the answer is correct.
Score: 1

Accepted Answers:
(C)

13) ***1 point***

For a Boolean expression B, the attribute B.falselist contains:

(A) List of locations where B evaluates to false
(B) List of locations to jump to if B is false
(C) List of locations where B is false and the locations to branch to
(D) None of the other options

- (A)
- (B)
- (C)
- (D)

Yes, the answer is correct.
Score: 1

Accepted Answers:
(B)