

Compiler Design Sessional 2 Exam (CS 1703) Set 3

CSE Deptt., SMIT

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Hi LAXMAN, when you submit this form, the owner will be able to see your name and email address.

1. The reduce action _____ a symbol from the stack.

- a) Pushes
- b) Pops
- c) Both of the mentioned
- d) None of the mentioned.

(1 Point)

- ☐ a
- ☒ b
- ☐ c
- ☐ d

2. In an attribute grammar, each production is not associated with a set of semantic rules for computing attributes. (True/False)

- a) True
- b) False

(1 Point)

- ☐ a
- ☒ b

3. Consider a grammar:

$S \rightarrow AB$

$A \rightarrow aB|c$

Which of the following is the correct item set of I_0 ?

a) $S \rightarrow .AB$
 $A \rightarrow .aB|.c$

b) $S' \rightarrow .S$
 $S \rightarrow .AB$
 $A \rightarrow .aB|.c$

c) $S' \rightarrow .AB$
 $A \rightarrow .aB|.c$

d) $S' \rightarrow S.\$$
 $S \rightarrow A.B$
 $A \rightarrow B.a|.c$

(2 Points)

☐ a

☒ b

☐ c

☐ d

4. Which of the following tasks should be performed in semantic analysis?

- a) Scope resolution
- b) Type checking
- c) Array-bound checking
- d) All the listed

(1 Point)

☐ a

☐ b

☐ c☒ d

5. In SLR(1) parsing table, if $[A \rightarrow \alpha.]$ is in li , then the action $[i, \alpha]$ is

- a) To shift into some state .
- b) To reduce $A \rightarrow \alpha$
- c) To set $goto[l_i, a] = lj$
- d) To reduce $A \rightarrow \alpha$ for all a in $FOLLOW(A)$.

(1 Point)

☐ a☐ b☐ c☒ d

6. When can we say that there is reduce-reduce conflict?

- a) If a state does not know whether it will make a shift operation using production rule 'i' or 'j' for a terminal.
- b) If a state does not know whether it will make a shift or reduction operation using production rule 'i' or 'j' for a terminal.
- c) If a state does not know whether it will make a reduction operation using production rule 'i' or 'j' for a terminal.
- d) None of the mentioned.

(1 Point)

☐ a☐ b☒ c☐ d

7. For constructing syntax tree for $a - 4 + b$, how many time `mknnode(op, left, right)` function will be used?

- a) 1
- b) 2
- c) 3
- d) 4

(2 Points)

☐ a

☒ b

☐ c

☐ d

8. The different restrictions on translation schemes are:

- a) An inherited attribute for a symbol on the right side must be computed in a semantic rule before that symbol.
- b) An action must not refer to a synthesized attribute of a symbol to its right.
- c) A synthesized attribute for the non-terminal on the left can be computed after all attributes it depends on have been computed. The actions are generally placed on the right side of the production.
- d) All the mentioned

(1 Point)

☐ a

☐ b

☐ c

☒ d

9. What are functions required to construct the canonical LR(0) collection of a grammar?

- a) Goto and Action functions
- b) Closure and Goto functions
- c) FIRST and FOLLOW functions
- d) Closure and Action functions.

(1 Point)

- ☐ a
- ☒ b
- ☐ c
- ☐ d

10. $X \rightarrow A.BC$, the given item indicates that:

- a) A string derivable from ABC is expected next on the input.
- b) A string derivable from BC has already been seen and now a string derivable from A is expected on the input
- c) A string derivable from A has already been seen and now a string derivable from BC is expected on the input
- d) The body of the production has already been seen and now it is time to reduce it to X.

(1 Point)

- ☐ a
- ☐ b
- ☒ c
- ☐ d

11. For the production $T \rightarrow T1 * F$, which one of the following is the correct semantic rule used for bottom up translator?

- a) $\text{val}[\text{ntop}] := \text{val}[\text{top}-3] + \text{val}[\text{top}]$
- b) $\text{val}[\text{ntop}] := \text{val}[\text{top}-2] * \text{val}[\text{top}]$
- c) $\text{val}[\text{ntop}] := \text{val}[\text{top}-4] + \text{val}[\text{top}]$
- d) $\text{val}[\text{ntop}] := \text{val}[\text{top}-5] * \text{val}[\text{top}]$

(2 Points)

☐ a

☒ b

☐ c

☐ d

12. Semantic analysis is the process of performing:

- I. Type CHECKING of each programming construct
- II. Interpretation of each programming construct
- III. Translation of each programming construct

- a) I and II
- b) I and III
- c) II and III
- d) I, II and III

(1 Point)

☒ a

☐ b

☐ c

☐ d

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