

$$E \Rightarrow BA \quad \text{S}$$

$$P^I = \{ S \Rightarrow bac \}$$

$$\underline{S \Rightarrow B}$$

$$A \Rightarrow a$$

$$A \Rightarrow aS$$

$$A \Rightarrow bCacB$$

$$B \Rightarrow AC$$

$$B \Rightarrow bS$$

$$B \Rightarrow aAa$$

$$C \Rightarrow AB$$

$$E \Rightarrow BA$$

$$S \Rightarrow ba$$

$$A \Rightarrow bacb$$

$$A \Rightarrow bCab$$

$$A \Rightarrow bab$$

$$\underline{B \Rightarrow A \quad \text{S}}$$

$$P^{II} = \{ S \Rightarrow bac \}$$

$$A \Rightarrow a$$

$$A \Rightarrow aS$$

$$A \Rightarrow bCacB$$

$$E \Rightarrow AC$$

$$B \Rightarrow bS$$

$$B \Rightarrow aAa$$

$$C \Rightarrow AB$$

$$\underline{E \Rightarrow BA}$$

$$S \Rightarrow ba$$

$$A \Rightarrow bacB$$

$$A \Rightarrow bCab$$

$$A \Rightarrow bab$$

$$S \Rightarrow AC$$

$$S \Rightarrow bS$$

$$S \Rightarrow aAa$$

$$B \Rightarrow a$$

$$B \Rightarrow aS$$

$$B \Rightarrow bCacB$$

$$B \Rightarrow bacB$$

$$B \Rightarrow bCab$$

$$B \Rightarrow bab \quad \text{S}$$

$$P^{III} = \{ S \rightarrow X_2 Y_6 \}$$

$$A \rightarrow a$$

$$A \rightarrow X_1 S$$

$$A \rightarrow Y_2 Y_4$$

$$B \rightarrow AC$$

$$B \rightarrow X_2 S$$

$$B \rightarrow X_1 Y_3$$

$$C \rightarrow AB$$

$$S \rightarrow X_1 X_2$$

$$A \rightarrow Y_5 X_4$$

$$A \rightarrow Y_6 Y_1$$

$$A \rightarrow X_2 Y_1$$

$$S \rightarrow AC$$

$$S \rightarrow X_2 S$$

$$S \rightarrow X_1 Y_3$$

$$B \rightarrow a$$

$$B \rightarrow X_1 S$$

$$B \rightarrow Y_2 Y_4$$

$$B \rightarrow Y_5 Y_4$$

$$B \rightarrow Y_6 Y_1$$

$$B \rightarrow X_1 Y_1$$

$$X_1 \rightarrow a$$

$$X_2 \rightarrow b$$

$$Y_1 \rightarrow X_1 X_2$$

$$Y_2 \rightarrow X_1 C$$

$$Y_3 \rightarrow AX_1$$

$$Y_4 \rightarrow CX_2$$

$$Y_5 \rightarrow X_2 X_1$$

$$Y_6 \rightarrow X_2 C$$

$$Y_7 \rightarrow Y_6 X_1$$