

- (6) 1. $J \supset (K \supset L)$
 2. $J \supset (M \supset L)$
 3. $\sim L$ / $J \supset \sim(K \vee M)$
- ★(7) 1. $M \vee (N \cdot O)$ / $\sim N \supset M$
- (8) 1. $P \supset (Q \vee R)$
 2. $(P \supset R) \supset (S \cdot T)$
 3. $Q \supset R$ / T
- (9) 1. $H \supset (I \supset N)$
 2. $(H \supset \sim I) \supset (M \vee N)$
 3. $\sim N$ / M
- ★(10) 1. $C \supset (A \cdot D)$
 2. $B \supset (A \cdot E)$ / $(C \vee B) \supset A$
- (11) 1. $M \supset (K \supset L)$
 2. $(L \vee N) \supset J$ / $M \supset (K \supset J)$
- (12) 1. $F \supset (G \cdot H)$ / $(A \supset F) \supset (A \supset H)$
- ★(13) 1. $R \supset B$
 2. $R \supset (B \supset F)$
 3. $B \supset (F \supset H)$ / $R \supset H$
- (14) 1. $(F \cdot G) \equiv H$
 2. $F \supset G$ / $F \equiv H$
- (15) 1. $C \supset (D \vee \sim E)$
 2. $E \supset (D \supset F)$ / $C \supset (E \supset F)$
- ★(16) 1. $Q \supset (R \supset S)$
 2. $Q \supset (T \supset \sim U)$
 3. $U \supset (R \vee T)$ / $Q \supset (U \supset S)$
- (17) 1. $N \supset (O \cdot P)$
 2. $Q \supset (R \cdot S)$ / $(P \supset Q) \supset (N \supset S)$
- (18) 1. $E \supset (F \supset G)$
 2. $H \supset (G \supset I)$
 3. $(F \supset I) \supset (J \vee \sim H)$ / $(E \cdot H) \supset J$
- ★(19) 1. $P \supset [(L \vee M) \supset (N \cdot O)]$
 2. $(O \vee T) \supset W$ / $P \supset (M \supset W)$
- (20) 1. $A \supset [B \supset (C \cdot \sim D)]$
 2. $(B \vee E) \supset (D \vee E)$ / $(A \cdot B) \supset (C \cdot E)$

II. Translate the following arguments into symbolic form, using the letters in the order in which they are listed. Then use conditional proof and the eighteen rules of inference to derive the conclusion of each. Having done so, attempt to derive the conclusion without using conditional proof.

- ★1. If high-tech products are exported to Russia, then domestic industries will benefit. If the Russians can effectively utilize high-tech products, then their standard of living will improve. Therefore, if high-tech products are exported