SECTION I

Time—35 minutes

24 Questions

Directions: Each group of questions in this section is based on a set of conditions. In answering some of the questions, it may be useful to draw a rough diagram. Choose the response that most accurately and completely answers each question and blacken the corresponding space on your answer sheet.

Questions 1–6

Seven students—fourth-year students Kim and Lee; third-year students Pat and Robin; and second-year students Sandy, Terry, and Val—and only those seven, are being assigned to rooms of equal size in a dormitory. Each room assigned must have either one, or two, or three students assigned to it, and will accordingly be called either a single, or a double, or a triple. The seven students are assigned to rooms in accordance with the following conditions:

No fourth-year student can be assigned to a triple.
No second-year student can be assigned to a single.
Lee and Robin must not share the same room.
Kim and Pat must share the same room.

1. Which one of the following is a combination of rooms to which the seven students could be assigned?
   (A) two triples and one single
   (B) one triple and four singles
   (C) three doubles and a single
   (D) two doubles and three singles
   (E) one double and five singles

2. If the room assigned to Robin is a single, which one of the following could be true?
   (A) There is exactly one double that has a second-year student assigned to it.
   (B) Lee is assigned to a single.
   (C) Sandy, Pat and one other student are assigned to a triple together.
   (D) Exactly three of the rooms assigned to the students are singles.
   (E) Exactly two of the rooms assigned to the students are doubles.

3. Which one of the following must be true?
   (A) Lee is assigned to a single.
   (B) Pat shares a double with another student.
   (C) Robin shares a double with another student.
   (D) Two of the second-year students share a double with each other.
   (E) Neither of the third-year students is assigned to a single.

4. If Robin is assigned to a triple, which one of the following must be true?
   (A) Lee is assigned to a single.
   (B) Two second-year students share a double with each other.
   (C) None of the rooms assigned to the students is a single.
   (D) Two of the rooms assigned to the students are singles.
   (E) Three of the rooms assigned to the students are singles.

5. If Terry and Val are assigned to different doubles from each other, then it must be true of the students' rooms that exactly
   (A) one is a single
   (B) two are singles
   (C) two are doubles
   (D) one is a triple
   (E) two are triples

6. Which one of the following could be true?
   (A) The two fourth-year students are assigned to singles.
   (B) The two fourth-year students share a double with each other.
   (C) Lee shares a room with a second-year student.
   (D) Lee shares a room with a third-year student
   (E) Pat shares a triple with two other students.

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Questions 7–11

A worker will insert colored light bulbs into a billboard equipped with exactly three light sockets, which are labeled lights 1, 2, and 3. The worker has three green bulbs, three purple bulbs, and three yellow bulbs. Selection of bulbs for the sockets is governed by the following conditions:

Whenever light 1 is purple, light 2 must be yellow.
Whenever light 2 is green, light 1 must be green.
Whenever light 3 is either purple or yellow, light 2 must be purple.

7. Which one of the following could be an accurate list of the colors of light bulbs selected for lights 1, 2, and 3, respectively?

(A) green, green, yellow
(B) purple, green, green
(C) purple, purple, green
(D) yellow, purple, green
(E) yellow, yellow, yellow

8. If light 1 is yellow, then any of the following can be true, EXCEPT:

(A) Light 2 is green.
(B) Light 2 is purple.
(C) Light 3 is green.
(D) Light 3 is purple.
(E) Light 3 is yellow.

9. There is exactly one possible color sequence of the three lights if which one of the following is true?

(A) Light 1 is purple.
(B) Light 2 is purple.
(C) Light 2 is yellow.
(D) Light 3 is purple.
(E) Light 3 is yellow.

10. If no green bulbs are selected, there are exactly how many possible different color sequences of the three lights?

(A) one
(B) two
(C) three
(D) four
(E) five

11. If no two lights are assigned light bulbs that are the same color as each other, then which one of the following could be true?

(A) Light 1 is green, and light 2 is purple.
(B) Light 1 is green, and light 2 is yellow.
(C) Light 1 is purple, and light 3 is yellow.
(D) Light 1 is yellow, and light 2 is green.
(E) Light 1 is yellow, and light 3 is purple.

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Questions 12–17

An attorney is scheduling interviews with witnesses for a given week, Monday through Saturday. Two full consecutive days of the week must be reserved for interviewing hostile witnesses. In addition, nonhostile witnesses Q, R, U, X, Y, and Z will each be interviewed exactly once for a full morning or afternoon. The only witnesses who will be interviewed simultaneously with each other are Q and R. The following conditions apply:

X must be interviewed on Thursday morning.
Q must be interviewed at some time before X.
U must be interviewed at some time before R.
Z must be interviewed at some time after X and at some time after Y.

12. Which one of the following is a sequence, from first to last, in which the nonhostile witnesses could be interviewed?

(A) Q with R, U, X, Y, Z
(B) Q, U, R, X with Y, Z
(C) U, X, Q, with R, X, Z
(D) U, Y, Q with R, X, Z
(E) X, Q with U, Z, R, Y

13. Which one of the following is acceptable as a complete schedule of witnesses for Tuesday morning, Tuesday afternoon, and Wednesday morning, respectively?

(A) Q, R, none
(B) R, none, Y
(C) U, none, X
(D) U, Y, none
(E) Y, Z, none

14. If Y is interviewed at some time after X, which one of the following must be a day reserved for interviewing hostile witnesses?

(A) Monday
(B) Tuesday
(C) Wednesday
(D) Friday
(E) Saturday

15. If R is interviewed at some time after Y, which one of the following must be a day reserved for interviewing hostile witnesses?

(A) Monday
(B) Tuesday
(C) Wednesday
(D) Thursday
(E) Friday

16. If on Wednesday afternoon and on Monday the attorney conducts no interviews, which one of the following must be true?

(A) Q is interviewed on the same day as U.
(B) R is interviewed on the same day as Y.
(C) Y is interviewed at some time before U.
(D) Y is interviewed at some time before Wednesday.
(E) Z is interviewed at some time before Friday.

17. If Z is interviewed on Saturday morning, which one of the following can be true?

(A) Wednesday is a day reserved for interviewing hostile witnesses.
(B) Friday is a day reserved for interviewing hostile witnesses.
(C) R is interviewed on Thursday.
(D) U is interviewed on Tuesday.
(E) Y is interviewed at some time before Thursday.

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Questions 18–24

During a four-week period, each of seven previously unadvertised products—G, H, J, K, L, M, and O—will be advertised. A different pair of these products will be advertised each week. Exactly one of the products will be a member of two of these four pairs. The following constraints must be observed:

J is not advertised during a given week unless H is advertised during the immediately preceding week.
The product that is advertised during two of the weeks is advertised during week 4 but is not advertised during week 3.
G is not advertised during a given week unless either J or else O is also advertised that week.
K is advertised during one of the first two weeks.
O is one of the products advertised during week 3.

18. Which one of the following could be the schedule of advertisements?

(A) week 1: G, J; week 2: K, L; week 3: O, M; week 4: H, L
(B) week l: H, K; week 2: J, G; week 3: O, L; week 4: M, K
(C) week 1: H, K; week 2: J, M; week 3: O, L; week 4: G, M
(D) week 1: H, L; week 2: J, M; week 3: O, G; week 4: K, L
(E) week 1: K, M; week 2: H, J; week 3: O, G; week 4: L, M

19. Which one of the following is a pair of products that CANNOT be advertised during the same week as each other?

(A) H and K
(B) H and M
(C) J and O
(D) K and L
(E) L and M

20. Which one of the following must be advertised during week 2?

(A) G
(B) J
(C) K
(D) L
(E) M

21. Which one of the following CANNOT be the product that is advertised during two of the weeks?

(A) G
(B) H
(C) K
(D) L
(E) M

22. If L is the product that is advertised during two of the weeks, which one of the following is a product that must be advertised during one of the weeks in which L is advertised?

(A) G
(B) H
(C) J
(D) K
(E) M

23. Which one of the following is a product that could be advertised in any of the four weeks?

(A) H
(B) J
(C) K
(D) L
(E) O

24. Which one of the following is a pair of products that could be advertised during the same week as each other?

(A) G and H
(B) H and J
(C) H and O
(D) K and O
(E) M and O

S T O P

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY.
DO NOT WORK ON ANY OTHER SECTION IN THE TEST.