

SECTION III

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 1–5

Each of seven travelers—Norris, Oribe, Paulsen, Rosen, Semonelli, Tan, and Underwood—will be assigned to exactly one of nine airplane seats. The seats are numbered from 1 through 9 and arranged in rows as follows:

Front row: 1 2 3

Middle row: 4 5 6

Last row: 7 8 9

Only seats in the same row as each other are immediately beside each other. Seat assignments must meet the following conditions:

Oribe's seat is in the last row.

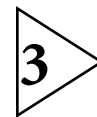
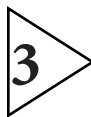
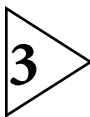
Paulsen's seat is immediately beside Rosen's seat and also immediately beside an unassigned seat.

Rosen's seat is in the row immediately behind the row in which Norris' seat is located.

Neither Semonelli nor Underwood is seated immediately beside Norris.

1. Which one of the following is a pair of travelers who could be assigned to seats 2 and 8, respectively?
 - (A) Norris, Semonelli
 - (B) Oribe, Underwood
 - (C) Paulsen, Oribe
 - (D) Rosen, Semonelli
 - (E) Underwood, Tan
2. If Semonelli and Underwood are not assigned to seats in the same row as each other, which one of the following must be false?
 - (A) Norris is assigned to seat 2.
 - (B) Paulsen is assigned to seat 5.
 - (C) Rosen is assigned to seat 4.
 - (D) Tan is assigned to seat 2.
 - (E) Underwood is assigned to seat 1.
3. If Semonelli is assigned to a seat in the same row as Underwood, which one of the following travelers could be assigned to a seat immediately beside one of the unassigned seats?
 - (A) Oribe
 - (B) Rosen
 - (C) Semonelli
 - (D) Tan
 - (E) Underwood
4. If the seat to which Tan is assigned is immediately beside a seat assigned to another traveler and also immediately beside one of the unassigned seats, which one of the following must be true?
 - (A) Tan is assigned to a seat in the front row.
 - (B) Tan is assigned to a seat in the last row.
 - (C) Oribe is assigned to a seat immediately beside Semonelli.
 - (D) Oribe is assigned to a seat immediately beside Tan.
 - (E) Semonelli is assigned to a seat immediately beside Underwood.
5. If Oribe is assigned to a seat immediately beside one of the unassigned seats, which one of the following must be true?
 - (A) Oribe is assigned to seat 8.
 - (B) Tan is assigned to seat 2.
 - (C) Underwood is assigned to seat 1.
 - (D) Seat 4 is unassigned.
 - (E) Seat 9 is unassigned.

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Questions 6–12

A university library budget committee must reduce exactly five of eight areas of expenditure—G, L, M, N, P, R, S, and W—in accordance with the following conditions:

If both G and S are reduced, W is also reduced.

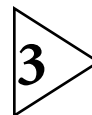
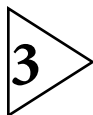
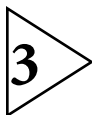
If N is reduced, neither R nor S is reduced.

If P is reduced, L is not reduced.

Of the three areas L, M, and R, exactly two are reduced.

6. Which one of the following could be a complete and accurate list of the areas of expenditure reduced by the committee?
(A) G, L, M, N, W
(B) G, L, M, P, W
(C) G, M, N, R, W
(D) G, M, P, R, S
(E) L, M, R, S, W
7. If W is reduced, which one of the following could be a complete and accurate list of the four other areas of expenditure to be reduced?
(A) G, M, P, S
(B) L, M, N, R
(C) L, M, P, S
(D) M, N, P, S
(E) M, P, R, S
8. If P is reduced, which one of the following is a pair of areas of expenditure both of which must be reduced?
(A) G, M
(B) M, R
(C) N, R
(D) R, S
(E) S, W
9. If both L and S are reduced, which one of the following could be a pair of areas of expenditure both of which are reduced?
(A) G, M
(B) G, P
(C) N, R
(D) N, W
(E) P, S
10. If R is not reduced, which one of the following must be true?
(A) G is reduced.
(B) N is not reduced.
(C) P is reduced.
(D) S is reduced.
(E) W is not reduced.
11. If both M and R are reduced, which one of the following is a pair of areas neither of which could be reduced?
(A) G, L
(B) G, N
(C) L, N
(D) L, P
(E) P, S
12. Which one of the following areas must be reduced?
(A) G
(B) L
(C) N
(D) P
(E) W

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Questions 13–18

A jeweler makes a single strand of beads by threading onto a string in a single direction from a clasp a series of solid-colored beads. Each bead is either green, orange, purple, red, or yellow. The resulting strand satisfies the following specifications:

If a purple bead is adjacent to a yellow bead, any bead that immediately follows and any bead that immediately precedes that pair must be red.

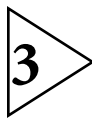
Any pair of beads adjacent to each other that are the same color as each other must be green.

No orange bead can be adjacent to any red bead.

Any portion of the strand containing eight consecutive beads must include at least one bead of each color.

13. If the strand has exactly eight beads, which one of the following is an acceptable order, starting from the clasp, for the eight beads?
 - (A) green, red, purple, yellow, red, orange, green, purple
 - (B) orange, yellow, red, red, yellow, purple, red, green
 - (C) purple, yellow, red, green, green, orange, yellow, orange
 - (D) red, orange, red, yellow, purple, green, yellow, green
 - (E) red, yellow, purple, red, green, red, green, green
14. If an orange bead is the fourth bead from the clasp, which one of the following is a pair that could be the second and third beads, respectively?
 - (A) green, orange
 - (B) green, red
 - (C) purple, purple
 - (D) yellow, green
 - (E) yellow, purple
15. If on an eight-bead strand the second, third, and fourth beads from the clasp are red, green, and yellow, respectively, and the sixth and seventh beads are purple and red, respectively, then which one of the following must be true?
 - (A) The first bead is purple.
 - (B) The fifth bead is green.
 - (C) The fifth bead is orange.
 - (D) The eighth bead is orange.
 - (E) The eighth bead is yellow.
16. If on a six-bead strand the first and second beads from the clasp are purple and yellow, respectively, then the fifth and sixth beads CANNOT be
 - (A) green and orange, respectively
 - (B) orange and green, respectively
 - (C) orange and yellow, respectively
 - (D) purple and orange, respectively
 - (E) yellow and purple, respectively
17. If on a nine-bead strand the first and fourth beads from the clasp are purple, and the second and fifth beads are yellow, which one of the following could be true?
 - (A) The seventh bead is orange.
 - (B) The eighth bead is green.
 - (C) The eighth bead is red.
 - (D) The ninth bead is red.
 - (E) The ninth bead is yellow.
18. If on an eight-bead strand the first, second, third, and fourth beads from the clasp are red, yellow, green, and red, respectively, then the fifth and sixth beads CANNOT be
 - (A) green and orange, respectively
 - (B) green and purple, respectively
 - (C) purple and orange, respectively
 - (D) purple and yellow, respectively
 - (E) yellow and orange, respectively

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Questions 19–24

At an evening concert, a total of six songs—O, P, T, X, Y, and Z—will be performed by three vocalists—George, Helen, and Leslie. The songs will be sung consecutively as solos, and each will be performed exactly once. The following constraints govern the composition of the concert program:

Y must be performed earlier than T and earlier than O.

P must be performed earlier than Z and later than O.

George can perform only X, Y, and Z.

Helen can perform only T, P, and X.

Leslie can perform only O, P, and X.

The vocalist who performs first must be different from the vocalist who performs last.

19. Which one of the following is an acceptable schedule for the performance of the songs, in order from the first to last song performed?
(A) X, T, Y, O, P, Z
(B) X, Z, Y, T, O, P
(C) Y, O, P, X, T, Z
(D) Y, P, O, Z, T, X
(E) Y, X, O, P, Z, T
20. Which one of the following must be true about the program?
(A) George performs X.
(B) Helen performs O.
(C) Helen performs T.
(D) Leslie performs P.
(E) Leslie performs X.
21. Which one of the following is a complete and accurate list of the songs any one of which could be the last song performed at the concert?
(A) O, P, Z
(B) O, T, X
(C) T, P, Z
(D) T, X, Z
(E) X, P, Z
22. If X is performed first, which one of the following must be true?
(A) X is performed by George.
(B) X is performed by Helen.
(C) P is the fourth song performed.
(D) Y is the second song performed.
(E) Y is the third song performed.
23. Each of the following is an acceptable schedule for the performance of the songs, in order from the first to last song performed, EXCEPT:
(A) Y, O, P, T, Z, X
(B) Y, T, O, P, X, Z
(C) Y, X, O, P, Z, T
(D) X, Y, O, P, Z, T
(E) X, Y, O, T, P, Z
24. If Y is performed first, the songs performed second, third, and fourth, respectively, could be
(A) T, X, and O
(B) T, Z, and O
(C) X, O, and P
(D) X, P, and Z
(E) X, T, 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.