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

Eight camp counselors—Fran, George, Henry, Joan, Kathy, Lewis, Nathan, and Olga—must each be assigned to supervise exactly one of three activities—swimming, tennis, and volleyball. The assignment of counselors must conform to the following conditions:

Each activity is supervised by at least two, but not more than three, of the eight counselors.
Henry supervises swimming.
Neither Kathy nor Olga supervises tennis.
Neither Kathy nor Nathan supervises the same activity as Joan.
If George supervises swimming, both Nathan and Olga supervise volleyball.

1. Which one of the following is an acceptable assignment of the counselors to the activities?

(A) Swimming: Fran, George, Henry; Tennis: Joan, Lewis; Volleyball: Kathy, Nathan, Olga
(B) Swimming: George, Henry, Olga; Tennis: Fran, Joan, Lewis; Volleyball: Kathy, Nathan
(C) Swimming: Henry; Tennis: Fran, George, Joan, Lewis; Volleyball: Kathy, Nathan, Olga
(D) Swimming: Henry, Joan, Kathy; Tennis: George, Nathan; Volleyball: Fran, Lewis, Olga
(E) Swimming: Henry, Nathan; Tennis: Fran, Kathy, Lewis; Volleyball: George, Joan, Olga

2. Which one of the following is a pair of counselors who could be two of three counselors assigned to supervise swimming?

(A) George and Nathan
(B) George and Olga
(C) Joan and Kathy
(D) Joan and Nathan
(E) Joan and Olga

3. Which one of the following is a pair of counselors who could together be assigned to supervise tennis?

(A) Fran and Kathy
(B) George and Nathan
(C) Henry and Lewis
(D) Joan and Nathan
(E) Joan and Olga

4. If George and Kathy are two of three counselors assigned to supervise swimming, which one of the following could be true of the assignment?

(A) Fran supervises swimming.
(B) Henry supervises tennis.
(C) Joan supervises volleyball.
(D) Lewis supervises volleyball.
(E) Nathan supervises tennis.

5. If Fran and Lewis are two of three counselors assigned to supervise swimming, which one of the following must be true of the assignment?

(A) George supervises volleyball.
(B) Henry supervises volleyball.
(C) Joan supervises tennis.
(D) Kathy supervises swimming.
(E) Nathan supervises tennis.

6. If Joan is assigned to supervise the same activity as Olga, which one of the following CANNOT be true of the assignment?

(A) Fran supervises swimming.
(B) George supervises swimming.
(C) Kathy supervises volleyball.
(D) Lewis supervises volleyball.
(E) Nathan supervises tennis.

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Questions 7–11

A fire chief is determining the work schedules of five firefighters: Fuentes, Graber, Howell, Iman, and Jackson. The schedule must meet the following conditions:

Except for Saturday and Sunday, when none of them works, exactly one of the firefighters works each day.

None of the firefighters can work more than two days per week.

No firefighter works on two consecutive days.

Fuentes never works later in the week than Jackson.

If Howell works, then Graber must work on the following day.

7. Which one of the following CANNOT be a Monday-to-Friday work schedule?

(A) Fuentes, Iman, Fuentes, Jackson, Iman
(B) Fuentes, Jackson, Howell, Graber, Fuentes
(C) Graber, Fuentes, Graber, Fuentes, Jackson
(D) Graber, Howell, Graber, Fuentes, Jackson
(E) Howell, Graber, Iman, Graber, Iman

8. If each firefighter is required to have at least two consecutive days off during the Monday-to-Friday workweek, which one of the following could be a possible work schedule?

(A) Howell, Graber, Howell, Graber, Iman
(B) Howell, Howell, Graber, Fuentes, Iman
(C) Iman, Fuentes, Jackson, Iman, Iman
(D) Fuentes, Howell, Graber, Fuentes, Jackson
(E) Jackson, Howell, Graber, Iman, Fuentes

9. If both Fuentes and Jackson work during a week, which one of the following statements CANNOT be true?

(A) Fuentes works on Monday and Wednesday.
(B) Jackson works on Monday and Wednesday.
(C) Fuentes works on Tuesday and Thursday.
(D) Jackson works on Tuesday and Thursday.
(E) Jackson works on Wednesday and Friday.

10. If Fuentes works two days during the week and Jackson works on Thursday, which one of the following statements could be true?

(A) Fuentes works on Tuesday.
(B) Graber works on Tuesday.
(C) Howell works on Tuesday.
(D) Graber works on Wednesday.
(E) Howell works on Wednesday.

11. If Graber does not work during the week, which one of the following statements must be true?

(A) Fuentes works exactly one day during the week.
(B) Fuentes works exactly two days during the week.
(C) Iman works exactly one day during the week.
(D) Iman works exactly two days during the week.
(E) Jackson works exactly one day during the week.

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Questions 12–19

A housing committee will consist of exactly five representatives, one of whom will be its chairperson. The representatives will be selected from among a group of five tenants—F, G, J, K, and M—and a group of four homeowners—P, Q, R, and S. The following conditions must be met:

The committee must include at least two representatives from each group.
The chairperson must be a representative belonging to the group from which exactly two representatives are selected.
If F is selected, Q must be selected.
If G is selected, K must be selected.
If either J or M is selected, the other must also be selected.
M and P cannot both be selected.

12. Which one of the following is an acceptable selection of representatives for the committee?

(A) F, G, Q, R, S
(B) F, J, K, P, Q
(C) F, P, Q, R, S
(D) J, K, M, Q, S
(E) J, M, P, Q, S

13. Which one of the following lists three representatives who could be selected together for the committee?

(A) F, G, J
(B) F, G, M
(C) F, J, M
(D) G, J, K
(E) G, J, M

14. If M is the chairperson of the committee, which one of the following is among the people who must also be on the committee?

(A) F
(B) G
(C) K
(D) P
(E) R

15. If F is the chairperson of the committee, which one of the following is among the people who must also be on the committee?

(A) G
(B) K
(C) P
(D) R
(E) S

16. If F is selected, any one of the following people could be the chairperson of the committee EXCEPT:

(A) G
(B) K
(C) P
(D) Q
(E) S

17. If neither F nor K is selected for the committee, which one of the following can be true?

(A) G is selected.
(B) P is selected.
(C) J is the chairperson.
(D) Q is the chairperson.
(E) S is the chairperson.

18. If the chairperson of the committee is to be a homeowner, which one of the following must be true?

(A) If G is selected, Q is also selected.
(B) If G is selected, R is also selected.
(C) If J is selected, F is also selected.
(D) If J is selected, Q is also selected.
(E) If J is selected, R is also selected.

19. The committee must include at least one representative from which one of the following pairs?

(A) F, P
(B) G, J
(C) K, Q
(D) M, P
(E) R, S

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Questions 20–24

Four apprentices—Louis, Madelyn, Nora, and Oliver—are initially assigned to projects Q, R, S, and T, respectively. During the year in which they are apprentices, two reassignments of apprentices to projects will be made, each time according to a different one of the following plans, which can be used in any order:

Plan 1. The apprentice assigned to project Q switches projects with the apprentice assigned to project S and the apprentice assigned to project R switches projects with the apprentice assigned to project T.

Plan 2. The apprentice assigned to project S switches projects with the apprentice assigned to project T.

Plan 3. Louis and Madelyn switch projects with each other.

20. Which one of the following must be true after the second reassignment of apprentices to projects during the year if that reassignment assigns Nora to project T ?

(A) Louis is assigned to project S.
(B) Madelyn is assigned to project R.
(C) Madelyn is assigned to project S.
(D) Oliver is assigned to project R.
(E) Oliver is assigned to project S.

21. Which one of the following could be true after only one reassignment during the year?

(A) Louis is assigned to project T.
(B) Nora is assigned to project R.
(C) Oliver is assigned to project Q.
(D) Louis and Nora each remain assigned to the same projects as before.
(E) Nora and Oliver each remain assigned to the same projects as before.

22. If at some time during the year, Louis is reassigned to project R, which one of the following could have been the assignment of apprentices to the projects immediately before the reassignment?

(A) Q: Louis; R: Madelyn; S: Oliver; T: Nora
(B) Q: Louis; R: Nora; S: Oliver; T: Madelyn
(C) Q: Nora; R: Madelyn; S: Louis; T: Oliver
(D) Q: Nora; R: Oliver; S: Louis; T: Madelyn
(E) Q: Oliver; R: Nora; S: Louis; T: Madelyn

23. Which one of the following is an acceptable assignment of apprentices to the projects after only one reassignment during the year?

(A) Q: Louis; R: Madelyn; S: Nora; T: Oliver
(B) Q: Madelyn; R: Louis; S: Nora; T: Oliver
(C) Q: Madelyn; R: Oliver; S: Nora; T: Louis
(D) Q: Nora; R: Louis; S: Oliver; T: Madelyn
(E) Q: Nora; R: Madelyn; S: Oliver; T: Louis

24. If the first reassignment is made according to plan 1, which one of the following must be true?

(A) Louis is assigned to project T as a result of the second reassignment.
(B) Madelyn is assigned to project Q as a result of the second reassignment.
(C) Madelyn is assigned to project T as a result of the second reassignment.
(D) Oliver is assigned to project S as a result of the second reassignment.
(E) Oliver is assigned to project T as a result of the second reassignment.

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.