

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 1–5

On Wednesday a physician will have exactly one appointment with seven patients—P, Q, R, S, T, U, W—one patient per appointment. The schedule of appointments, chronologically numbered 1 through 7, must meet the following conditions:

Q's appointment is at some time before W's appointment.

U's appointment is at some time before P's appointment.

Either R or T has appointment 3.

S's appointment is either the appointment immediately before or the appointment immediately after R's appointment.

1. Which one of the following is an acceptable schedule of appointments in order from 1 to 7?
 - (A) Q, S, R, P, W, U, T
 - (B) Q, U, W, S, R, T, P
 - (C) S, Q, R, T, W, U, P
 - (D) T, U, R, S, W, P, Q
 - (E) U, Q, T, P, R, S, W
2. If W has appointment 2 and P has appointment 5, then which one of the following must be true?
 - (A) R has appointment 6.
 - (B) S has appointment 4.
 - (C) S has appointment 7.
 - (D) U has appointment 1.
 - (E) U has appointment 4.
3. If U's appointment is immediately after T's appointment and immediately before R's appointment, then which one of the following must be true?
 - (A) Q's appointment is at some time before P's appointment.
 - (B) S's appointment is at some time before P's appointment.
 - (C) S's appointment is immediately before Q's appointment.
 - (D) W's appointment is immediately before P's appointment.
 - (E) W's appointment is at some time before S's appointment.
4. If P's appointment is immediately before S's appointment, then each of the following could be true EXCEPT:
 - (A) R's appointment is immediately before W's appointment.
 - (B) T's appointment is immediately before Q's appointment.
 - (C) U's appointment is immediately before P's appointment.
 - (D) U's appointment is immediately before Q's appointment.
 - (E) W's appointment is immediately before T's appointment.
5. If T's appointment is immediately after P's appointment and immediately before W's appointment, then which one of the following must be true?
 - (A) W's appointment is at some time before R's appointment.
 - (B) U's appointment is at some time before R's appointment.
 - (C) S's appointment is at some time before U's appointment.
 - (D) R's appointment is at some time before P's appointment.
 - (E) Q's appointment is at some time before S's appointment.

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Questions 6–12

Exactly six employees—officers F, G, and H, and supervisors K, L, and M—must be assigned to exactly three committees—Policy, Quality, and Sales—with exactly three employees per committee. Committee assignments must conform to the following conditions:

Each committee must have at least one officer assigned to it.

Each employee must be assigned to at least one committee.

All three officers must be assigned to the Policy Committee.

G cannot be assigned to the same committee as L.

K must be assigned to the Sales Committee.

6. Which one of the following is a group of three employees who can be assigned together to the Sales Committee?
(A) F, G, and H
(B) F, G, and M
(C) G, K, and L
(D) H, K, and L
(E) K, L, and M
7. If H is assigned to exactly one committee, and if no committee has both F and M assigned to it, then it must be true that
(A) G and M are both assigned to the Quality Committee
(B) K and L are both assigned to the Sales Committee
(C) K is assigned to exactly two committees
(D) L is assigned to exactly two committees
(E) M is assigned to exactly two committees
8. Which one of the following CANNOT be true?
(A) F is assigned to exactly one committee.
(B) G is assigned to exactly three committees.
(C) H is assigned to exactly three committees.
(D) K is assigned to exactly one committee.
(E) L is assigned to exactly two committees.
9. If F is assigned to exactly three committees, and G is assigned to exactly two committees, then which one of the following must be true?
(A) G is assigned to the Quality Committee.
(B) G is assigned to the Sales Committee.
(C) K is assigned to the Quality Committee.
(D) L is assigned to the Sales Committee.
(E) M is assigned to the Quality Committee.
10. Which one of the following is a group of three employees who can be assigned together to the Quality Committee?
(A) F, G, and H
(B) F, G, and K
(C) G, H, and K
(D) G, K, and L
(E) H, L, and M
11. If L is assigned to exactly two committees, which of the following must be true?
(A) F is assigned to the Sales Committee.
(B) G is assigned to the Sales Committee.
(C) H is assigned to the Quality Committee.
(D) K is assigned to the Quality Committee.
(E) M is assigned to the Quality Committee.
12. Which one of the following CANNOT be true?
(A) F and G are each assigned to exactly one committee.
(B) F and H are each assigned to exactly one committee.
(C) G and H are each assigned to exactly one committee.
(D) F and M are both assigned to the Sales Committee.
(E) G and K are both assigned to the Quality Committee.

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Questions 13–17

On Tuesday Vladimir and Wendy each eat exactly four separate meals: breakfast, lunch, dinner, and a snack. The following is all that is known about what they eat during that day:

At no meal does Vladimir eat the same kind of food as Wendy.

Neither of them eats the same kind of food more than once during the day.

For breakfast, each eats exactly one of the following: hot cakes, poached eggs, or omelet.

For lunch, each eats exactly one of the following: fish, hot cakes, macaroni, or omelet.

For dinner, each eats exactly one of the following: fish, hot cakes, macaroni, or omelet.

For a snack, each eats exactly one of the following: fish or omelet.

Wendy eats an omelet for lunch.

13. Which one of the following statements must be true?

- (A) Vladimir eats fish for lunch.
- (B) Vladimir eats fish for dinner.
- (C) Vladimir eats fish for his snack.
- (D) Wendy eats fish for dinner.
- (E) Wendy eats fish for her snack.

14. Vladimir must eat which one of the following foods?

- (A) fish
- (B) hot cakes
- (C) macaroni
- (D) omelet
- (E) poached eggs

15. If both Vladimir and Wendy eat macaroni on Tuesday, then which one of the following statements could be true?

- (A) Vladimir eats fish for lunch.
- (B) Vladimir eats hot cakes for lunch.
- (C) Vladimir eats macaroni for dinner.
- (D) Wendy eats hot cakes for breakfast.
- (E) Wendy eats hot cakes for dinner.

16. If Wendy does not eat macaroni on Tuesday, then which one of the following statements could be true?

- (A) Vladimir eats poached eggs for breakfast.
- (B) Vladimir eats fish for lunch.
- (C) Vladimir eats hot cakes for lunch.
- (D) Wendy eats hot cakes for breakfast.
- (E) Wendy eats fish for dinner.

17. If Wendy eats poached eggs for breakfast, then which one of the following statements cannot be true?

- (A) Vladimir eats fish for lunch.
- (B) Vladimir eats hot cakes for lunch.
- (C) Vladimir eats macaroni for dinner.
- (D) Wendy eats hot cakes for dinner.
- (E) Wendy eats macaroni for dinner.

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Questions 18–24

Eight people—Jack, Karen, Laura, Mark, Nick, Owen, Peggy, and Ruth—will be placed on two four-person teams—X and Y—for a relay race that is run in four successive legs: first, second, third, and fourth. The teams race concurrently. Each team member runs exactly one of the legs, one team member per leg, according to the following conditions:

Jack is on the same team as Karen.

Karen is not on the same team as Nick.

Ruth runs an earlier leg of the race than Peggy runs, whether or not they are on the same team as each other.

Mark and Nick are both on team Y.

Neither Jack nor Mark runs third.

Karen and Laura both run second.

Owen runs fourth.

18. Which one of the following must be true?
 - (A) If Jack and Owen are assigned to the same team as each other, Jack runs first.
 - (B) If Jack and Peggy are assigned to the same team as each other, Jack runs fourth.
 - (C) If Jack and Ruth are assigned to the same team as each other, Ruth runs third.
 - (D) If Mark and Owen are assigned to the same team as each other, Mark runs fourth.
 - (E) If Mark and Ruth are assigned to the same team as each other, Ruth runs third.
19. If Ruth is assigned to team X, which one of the following is a complete and accurate list of the legs that she could run?
 - (A) first
 - (B) second
 - (C) first, second
 - (D) first, third
 - (E) second, third
20. If Owen and Ruth are assigned to the same team as each other, which one of the following must be true?
 - (A) Mark runs fourth.
 - (B) Nick runs first.
 - (C) Nick runs fourth.
 - (D) Peggy runs first.
 - (E) Peggy runs fourth.
21. Any of the following can be true EXCEPT:
 - (A) Jack runs first.
 - (B) Mark runs fourth.
 - (C) Nick runs first.
 - (D) Nick and Peggy both run third.
 - (E) Owen and Peggy both run fourth.
22. If Ruth and Peggy are assigned to the same team as each other, which one of the following must be true?
 - (A) Jack runs first.
 - (B) Mark runs fourth.
 - (C) Nick runs third.
 - (D) Peggy runs third.
 - (E) Ruth runs first.
23. Any of the following can be true EXCEPT:
 - (A) Jack runs fourth.
 - (B) Nick runs fourth.
 - (C) Peggy runs fourth.
 - (D) Ruth runs first.
 - (E) Ruth runs third.
24. If Peggy runs third on the same team to which Jack is assigned, which one of the following must be true?
 - (A) Jack runs the first leg on the team to which he is assigned.
 - (B) Ruth runs the first leg on the team to which she is assigned.
 - (C) Owen runs on the same team as Jack.
 - (D) Owen runs on the same team as Mark.
 - (E) Ruth runs on the same team as Mark.

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.