SECTION II

Time—35 minutes

23 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

A professor must determine the order in which five of her students—Fernando, Ginny, Hakim, Juanita, and Kevin—will perform in an upcoming piano recital. Each student performs one piece, and no two performances overlap. The following constraints apply:

Ginny must perform earlier than Fernando.
Kevin must perform earlier than Hakim and Juanita.
Hakim must perform either immediately before or immediately after Fernando.

1. Which one of the following could be the order, from first to last, in which the students perform?

(A) Ginny, Fernando, Hakim, Kevin, Juanita
(B) Ginny, Juanita, Kevin, Hakim, Fernando
(C) Ginny, Kevin, Hakim, Juanita, Fernando
(D) Kevin, Ginny, Juanita, Fernando, Hakim
(E) Kevin, Juanita, Fernando, Hakim, Ginny

2. If Juanita performs earlier than Ginny, then which one of the following could be true?

(A) Fernando performs fourth.
(B) Ginny performs second.
(C) Hakim performs third.
(D) Juanita performs third.
(E) Kevin performs second.

3. Which one of the following CANNOT be true?

(A) Fernando performs immediately before Juanita.
(B) Ginny performs immediately before Hakim.
(C) Hakim performs immediately before Ginny.
(D) Juanita performs immediately before Ginny.
(E) Kevin performs immediately before Hakim.

4. The order in which the students perform is fully determined if which one of the following is true?

(A) Fernando performs immediately before Hakim.
(B) Ginny performs immediately before Fernando.
(C) Hakim performs immediately before Juanita.
(D) Juanita performs immediately before Hakim.
(E) Kevin performs immediately before Fernando.

5. How many of the students are there any one of whom could perform fourth?

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

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Questions 6–11

As part of an open house at a crafts studio, three teachers—Jiang, Kudrow, and Lanning—will give six consecutive presentations on six different subjects. Jiang will present on needlework and origami; Kudrow on pottery, stenciling, and textile making; and Lanning on woodworking. The order of their presentations will meet the following conditions:

Kudrow cannot give two presentations in a row.

The presentation on stenciling must be given earlier than the one on origami.

The presentation on textile making must be given earlier than the one on woodworking.

6. Which one of the following could be the order of the presentations, from first to sixth?

(A) stenciling, origami, needlework, textile making, pottery, woodworking
(B) stenciling, origami, pottery, woodworking, needlework, textile making
(C) stenciling, origami, textile making, woodworking, needlework, pottery
(D) textile making, origami, stenciling, woodworking, needlework, pottery
(E) textile making, stenciling, woodworking, needlework, pottery, origami

7. If textile making is presented fifth, which one of the following could be true?

(A) Needlework is presented sixth.
(B) Pottery is presented fourth.
(C) Stenciling is presented second.
(D) Stenciling is presented third.
(E) Woodworking is presented second.

8. If needlework is presented first, which one of the following could be true?

(A) Origami is presented sixth.
(B) Pottery is presented second.
(C) Stenciling is presented third.
(D) Textile making is presented fifth.
(E) Woodworking is presented third.

9. Jiang CANNOT give both

(A) the first and third presentations
(B) the first and fourth presentations
(C) the first and fifth presentations
(D) the second and third presentations
(E) the second and fourth presentations

10. If needlework is presented sixth, which one of the following must be true?

(A) Origami is presented fourth.
(B) Pottery is presented fifth.
(C) Stenciling is presented third.
(D) Textile making is presented first.
(E) Woodworking is presented fourth.

11. Which one of the following CANNOT be the subject of the second presentation?

(A) needlework
(B) origami
(C) pottery
(D) textile making
(E) woodworking

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Questions 12–16

The organizer of a luncheon will select exactly five foods to be served from among exactly eight foods: two desserts—F and G; three main courses—N, O, and P; three side dishes—T, V, and W. Only F, N, and T are hot foods. The following requirements will be satisfied:

At least one dessert, at least one main course, and at least one side dish must be selected.
At least one hot food must be selected.
If either P or W is selected, both must be selected.
If G is selected, O must be selected.
If N is selected, V cannot be selected.

12. Which one of the following is a list of foods that could be the foods selected?

(A) F, N, O, T, V
(B) F, O, P, T, W
(C) G, N, P, T, W
(D) G, O, P, T, V
(E) G, O, P, V, W

13. Which one of the following is a pair of foods of which the organizer of the luncheon must select at least one?

(A) F, T
(B) G, O
(C) N, T
(D) O, P
(E) V, W

14. If O is the only main course selected, then which one of the following CANNOT be selected?

(A) F
(B) G
(C) T
(D) V
(E) W

15. If F is not selected, which one of the following could be true?

(A) P is the only main course selected.
(B) T is the only side dish selected.
(C) Exactly two hot foods are selected.
(D) Exactly three main courses are selected.
(E) Exactly three side dishes are selected.

16. If T and V are the only side dishes selected, then which one of the following is a pair of foods each of which must be selected?

(A) F and G
(B) F and N
(C) F and P
(D) N and O
(E) O and P

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Questions 17–23

A television programming director is scheduling a three-hour block of programs beginning at 1 P.M. The programs that are to fill this time block include an hour-long program called *Generations* and four half-hour programs: *Roamin'*, *Sundown*, *Terry*, and *Waterloo*. The programs will be shown one after the other, each program shown exactly once. The schedule must meet the following constraints:

Generations starts on the hour rather than the half hour.
Terry starts on the half hour rather than the hour.
Roamin' is shown earlier than *Sundown*.
If *Waterloo* is shown earlier than *Terry*, it is shown immediately before *Terry*.

17. Which one of the following could be the order in which the programs are shown, from earliest to latest?

(A) *Generations*, *Roamin'*, *Waterloo*, *Terry*, *Sundown*
(B) *Roamin'*, *Sundown*, *Waterloo*, *Terry*, *Generations*
(C) *Roamin'*, *Terry*, *Waterloo*, *Generations*, *Sundown*
(D) *Waterloo*, *Roamin'*, *Sundown*, *Terry*, *Generations*
(E) *Waterloo*, *Terry*, *Sundown*, *Roamin'*, *Generations*

18. If *Waterloo* is the first program, then how many orders are there in which the remaining programs could be shown?

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

19. If *Roamin'* is the second program, then each of the following could be true EXCEPT:

(A) *Sundown* is the third program.
(B) *Sundown* is the fourth program.
(C) *Terry* is the fifth program.
(D) *Waterloo* is the third program.
(E) *Waterloo* is the fifth program.

20. If *Sundown* is the third program, then which one of the following must be true?

(A) *Generations* is the first program.
(B) *Roamin'* is the first program.
(C) *Roamin'* is the second program.
(D) *Terry* is the fifth program.
(E) *Waterloo* is the fourth program.

21. If *Generations* is the third program, then which one of the following could be true?

(A) *Roamin'* is the second program.
(B) *Roamin'* is the fifth program.
(C) *Sundown* is the fourth program.
(D) *Terry* is the fourth program.
(E) *Waterloo* is the second program.

22. Which one of the following CANNOT be true?

(A) *Sundown* is shown immediately before *Generations.*
(B) *Waterloo* is shown immediately before *Roamin'*.
(C) *Generations* is shown immediately before *Sundown*.
(D) *Roamin'* is shown immediately before *Terry*.
(E) *Terry* is shown immediately before *Waterloo*.

23. Which one of the following, if substituted for the constraint that *Generations* starts on the hour rather than the half hour, would have the same effect in determining the order in which the programs are shown?

(A) *Generations* is not shown immediately before *Terry*.
(B) *Generations* is either the first program or the fifth.
(C) *Generations* is neither the second program nor the fourth.
(D) If *Generations* is shown third, then *Roamin'* is shown first.
(E) If *Generations* is not shown first, then it is shown later than *Terry*.

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.