

SECTION I

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

On a particular Saturday, a student will perform six activities—grocery shopping, hedge trimming, jogging, kitchen cleaning, laundry, and motorbike servicing. Each activity will be performed once, one at a time. The order in which the activities are performed is subject to the following conditions:

Grocery shopping has to be immediately after hedge trimming.

Kitchen cleaning has to be earlier than grocery shopping.

Motorbike servicing has to be earlier than laundry.

Motorbike servicing has to be either immediately before or immediately after jogging.

1. Which one of the following could be the order, from first to last, of the student's activities?
 - (A) jogging, kitchen cleaning, hedge trimming, grocery shopping, motorbike servicing, laundry
 - (B) jogging, motorbike servicing, laundry, hedge trimming, grocery shopping, kitchen cleaning
 - (C) kitchen cleaning, hedge trimming, grocery shopping, laundry, motorbike servicing, jogging
 - (D) kitchen cleaning, jogging, motorbike servicing, laundry, hedge trimming, grocery shopping
 - (E) motorbike servicing, jogging, laundry, hedge trimming, kitchen cleaning, grocery shopping
2. Which one of the following activities CANNOT be third?
 - (A) grocery shopping
 - (B) hedge trimming
 - (C) jogging
 - (D) kitchen cleaning
 - (E) motorbike servicing
3. Which one of the following CANNOT be true?
 - (A) Hedge trimming is fourth.
 - (B) Jogging is fourth.
 - (C) Kitchen cleaning is second.
 - (D) Laundry is third.
 - (E) Motorbike servicing is second.
4. Which one of the following activities CANNOT be fifth?
 - (A) grocery shopping
 - (B) hedge trimming
 - (C) jogging
 - (D) laundry
 - (E) motorbike servicing
5. Which one of the following, if substituted for the condition that motorbike servicing has to be earlier than laundry, would have the same effect in determining the order of the student's activities?
 - (A) Laundry has to be one of the last three activities.
 - (B) Laundry has to be either immediately before or immediately after jogging.
 - (C) Jogging has to be earlier than laundry.
 - (D) Laundry has to be earlier than hedge trimming.
 - (E) Laundry has to be earlier than jogging.

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Questions 6–11

Each of exactly three actors—Gombrich, Otto, and Raines—auditions for parts on exactly two of the following days of a particular week: Wednesday, Thursday, Friday, and Saturday. On each of these days at least one of the actors auditions for parts. The order of that week's auditions must meet the following conditions:

The first day on which Otto auditions is some day before the first day on which Raines auditions.

There is at least one day on which both Gombrich and Raines audition.

At least one of the actors auditions on both Thursday and Saturday.

6. Which one of the following could be an accurate matching of the actors to the days on which they audition?
(A) Gombrich: Thursday, Friday
Otto: Wednesday, Saturday
Raines: Friday, Saturday
(B) Gombrich: Thursday, Saturday
Otto: Wednesday, Friday
Raines: Friday, Saturday
(C) Gombrich: Friday, Saturday
Otto: Thursday, Saturday
Raines: Wednesday, Friday
(D) Gombrich: Wednesday, Thursday
Otto: Wednesday, Saturday
Raines: Thursday, Saturday
(E) Gombrich: Wednesday, Friday
Otto: Wednesday, Thursday
Raines: Thursday, Saturday
7. If Otto auditions on both Thursday and Saturday, then Gombrich could audition on both
(A) Wednesday and Thursday
(B) Wednesday and Friday
(C) Thursday and Friday
(D) Thursday and Saturday
(E) Friday and Saturday
8. Which one of the following CANNOT be true of the week's auditions?
(A) Gombrich's last audition is on Thursday.
(B) Gombrich's last audition is on Friday.
(C) Otto's last audition is on Saturday.
(D) Raines's last audition is on Friday.
(E) Raines's last audition is on Thursday.
9. Which one of the following pairs of days CANNOT be the two days on which Otto auditions?
(A) Wednesday and Thursday
(B) Wednesday and Friday
(C) Wednesday and Saturday
(D) Thursday and Friday
(E) Thursday and Saturday
10. Which one of the following could be true?
(A) All three actors audition on Wednesday.
(B) All three actors audition on Friday.
(C) All three actors audition on Saturday.
(D) Otto auditions on Friday and on Saturday.
(E) Raines auditions on Wednesday and on Friday.
11. If Gombrich auditions on both Wednesday and Saturday, then which one of the following could be true?
(A) Otto auditions on both Wednesday and Thursday.
(B) Otto auditions on both Wednesday and Friday.
(C) Otto auditions on both Wednesday and Saturday.
(D) Raines auditions on both Wednesday and Saturday.
(E) Raines auditions on both Thursday and Friday.

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Questions 12–17

Each of seven toy dinosaurs—an iguanadon, a lambeosaur, a plateosaur, a stegosaur, a tyrannosaur, an ultrasaur, and a velociraptor—is completely colored either green, mauve, red, or yellow. A display is to consist entirely of exactly five of these toys. The display must meet the following specifications:

Exactly two mauve toys are included.

The stegosaur is red and is included.

The iguanadon is included only if it is green.

The plateosaur is included only if it is yellow.

The velociraptor is included only if the ultrasaur is not.

If both the lambeosaur and the ultrasaur are included, at least one of them is not mauve.

12. Which one of the following could be the toys included in the display?
 - (A) the lambeosaur, the plateosaur, the stegosaur, the ultrasaur, the velociraptor
 - (B) the lambeosaur, the plateosaur, the stegosaur, the tyrannosaur, the ultrasaur
 - (C) the iguanadon, the lambeosaur, the plateosaur, the stegosaur, the ultrasaur
 - (D) the iguanadon, the lambeosaur, the plateosaur, the tyrannosaur, the velociraptor
 - (E) the iguanadon, the lambeosaur, the stegosaur, the ultrasaur, the velociraptor
13. If the tyrannosaur is not included in the display, then the display must contain each of the following EXCEPT:
 - (A) a green iguanadon
 - (B) a mauve velociraptor
 - (C) a mauve lambeosaur
 - (D) a mauve ultrasaur
 - (E) a yellow plateosaur
14. Which one of the following is a pair of toys that could be included in the display together?
 - (A) a green lambeosaur and a mauve velociraptor
 - (B) a green lambeosaur and a yellow tyrannosaur
 - (C) a green lambeosaur and a yellow ultrasaur
 - (D) a yellow tyrannosaur and a green ultrasaur
 - (E) a yellow tyrannosaur and a red velociraptor
15. If the display includes a yellow tyrannosaur, then which one of the following must be true?
 - (A) The iguanadon is included in the display.
 - (B) The plateosaur is not included in the display.
 - (C) The display includes two yellow toy dinosaurs.
 - (D) The display contains a green lambeosaur.
 - (E) The display contains a mauve velociraptor.
16. If both the iguanadon and the ultrasaur are included in the display, then the display must contain which one of the following?
 - (A) a mauve tyrannosaur
 - (B) a mauve ultrasaur
 - (C) a yellow lambeosaur
 - (D) a yellow plateosaur
 - (E) a yellow ultrasaur
17. If the display includes two green toys, then which one of the following could be true?
 - (A) There is exactly one yellow toy included in the display.
 - (B) The tyrannosaur is included in the display and it is green.
 - (C) Neither the lambeosaur nor the velociraptor is included in the display.
 - (D) Neither the tyrannosaur nor the velociraptor is included in the display.
 - (E) Neither the ultrasaur nor the velociraptor is included in the display.

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Questions 18–23

A charitable foundation awards grants in exactly four areas—medical services, theater arts, wildlife preservation, and youth services—each grant being in one of these areas. One or more grants are awarded in each of the four quarters of a calendar year. Additionally, over the course of a calendar year, the following must obtain:

- Grants are awarded in all four areas.
- No more than six grants are awarded.
- No grants in the same area are awarded in the same quarter or in consecutive quarters.
- Exactly two medical services grants are awarded.
- A wildlife preservation grant is awarded in the second quarter.

18. Which one of the following is a possible allocation of grants in a particular calendar year?
 - (A) first quarter: theater arts
second quarter: wildlife preservation
third quarter: medical services, youth services
fourth quarter: theater arts
 - (B) first quarter: wildlife preservation
second quarter: medical services
third quarter: theater arts
fourth quarter: medical services, youth services
 - (C) first quarter: youth services
second quarter: wildlife preservation, medical services
third quarter: theater arts
fourth quarter: medical services, youth services
 - (D) first quarter: medical services, theater arts
second quarter: theater arts, wildlife preservation
third quarter: youth services
fourth quarter: medical services
 - (E) first quarter: medical services, theater arts
second quarter: wildlife preservation, youth services
third quarter: theater arts
fourth quarter: medical services, youth services
19. Which one of the following CANNOT be true in a particular calendar year?
 - (A) In each of the two quarters in which a medical services grant is awarded, no other grant is awarded.
 - (B) Exactly two theater arts grants are awarded, one in the second quarter and one in the fourth quarter.
 - (C) Exactly two youth services grants are awarded, one in the first quarter and one in the third quarter.
 - (D) Two wildlife preservation grants and two youth services grants are awarded.
 - (E) Three grants are awarded in the fourth quarter.
20. If a wildlife preservation grant and a youth services grant are awarded in the same quarter of a particular calendar year, then any of the following could be true that year EXCEPT:
 - (A) A medical services grant is awarded in the second quarter.
 - (B) A theater arts grant is awarded in the first quarter.
 - (C) A theater arts grant is awarded in the second quarter.
 - (D) A wildlife preservation grant is awarded in the fourth quarter.
 - (E) A youth services grant is awarded in the third quarter.
21. If exactly two grants are awarded in just one of the four quarters of a particular calendar year, then which one of the following could be true that year?
 - (A) Two youth services grants are awarded.
 - (B) Neither a medical services grant nor a youth services grant is awarded in the first quarter.
 - (C) A wildlife preservation grant is awarded in the fourth quarter.
 - (D) Both a youth services grant and a theater arts grant are awarded in the first quarter.
 - (E) A youth services grant is awarded in the first quarter and a theater arts grant is awarded in the second quarter.
22. Which one of the following CANNOT be true in a particular calendar year?
 - (A) Three grants are awarded in a quarter, none of which is a medical services grant.
 - (B) Exactly two grants are awarded in the first quarter and exactly two in the third quarter.
 - (C) Exactly two grants are awarded in the first quarter and exactly two in the fourth quarter.
 - (D) Theater arts grants are awarded in the first and fourth quarters, and no other grants are awarded in those two quarters.
 - (E) Wildlife preservation grants are awarded in the second and fourth quarters, and no other grants are awarded in those two quarters.
23. It is fully determined which grants are awarded for each quarter of a particular calendar year if which one of the following is true that year?
 - (A) Two theater arts grants are awarded.
 - (B) Two youth services grants are awarded.
 - (C) Three grants are awarded in the first quarter.
 - (D) Three grants are awarded in the second quarter.
 - (E) Three grants are awarded in the third quarter.

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.