SECTION III

Time—35 minutes

23 Questions

<u>Directions:</u> 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.

<u>Questions 1–6</u>

Historical records show that over the course of five consecutive years—601, 602, 603, 604, and 605—a certain emperor began construction of six monuments: F, G, H, L, M, and S. A historian is trying to determine the years in which the individual monuments were begun. The following facts have been established:
  L was begun in a later year than G, but in an earlier
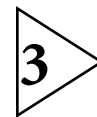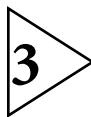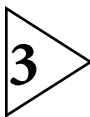   year than F.
  H was begun no earlier than 604.
  M was begun earlier than 604.
  Two of the monuments were begun in 601, and no
    other monument was begun in the same year as any
    of the other monuments.

1. Which one of the following could be an accurate matching of monuments to the years in which they were begun?

    (A)   601: G;   602: L, S;   603: M;   604: H;   605: F
    (B)   601: G,M;   602: L;   603: H;   604: S;   605: F
    (C)   601: G, M;   602: S;   603: F;   604: L;   605: H
    (D)   601: G, S;   602: L;   603: F;   604: M;   605: H
    (E)   601: G, S;   602: L;   603: M;   604: H;   605: F

2. What is the latest year in which L could have been begun?

    (A)   601
    (B)   602
    (C)   603
    (D)   604
    (E)   605

3. The years in which each of the monuments were begun can be completely determined if which one of the following is discovered to be true?

    (A)   F was begun in 603.
    (B)   G was begun in 602.
    (C)   H was begun in 605.
    (D)   M was begun in 602.
    (E)   S was begun in 604.

4. Which one of the following must be true?

    (A)   F was begun in a later year than M.
    (B)   F was begun in a later year than S.
    (C)   H was begun in a later year than F.
    (D)   H was begun in a later year than S.
    (E)   M was begun in a later year than G.

5. L must be the monument that was begun in 602 if which one of the following is true?

    (A)   F was begun in 605.
    (B)   G was begun in 601.
    (C)   H was begun in 604.
    (D)   M was begun in 601.
    (E)   S was begun in 603.

6. If M was begun in a later year than L, then which one of the following could be true?

    (A)   F was begun in 603.
    (B)   G was begun in 602.
    (C)   H was begun in 605.
    (D)   L was begun in 603.
    (E)   S was begun in 604.

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Questions 7–12

A company organizing on-site day care consults with a group of parents composed exclusively of volunteers from among the seven employees—Felicia, Leah, Masatomo, Rochelle, Salman, Terry, and Veena—who have become parents this year. The composition of the volunteer group must be consistent with the following:

> If Rochelle volunteers, then so does Masatomo.
> If Masatomo volunteers, then so does Terry.
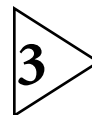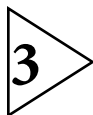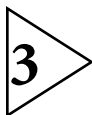> If Salman does not volunteer, then Veena volunteers.
> If Rochelle does not volunteer, then Leah volunteers.
> If Terry volunteers, then neither Felicia nor Veena volunteers.

7. Which one of the following could be a complete and accurate list of the volunteers?

    (A) Felicia, Salman
    (B) Masatomo, Rochelle
    (C) Leah, Salman, Terry
    (D) Salman, Rochelle, Veena
    (E) Leah, Salman, Terry, Veena

8. If Veena volunteers, then which one of the following could be true?

    (A) Felicia and Rochelle also volunteer.
    (B) Felicia and Salman also volunteer.
    (C) Leah and Masatomo also volunteer.
    (D) Leah and Terry also volunteer.
    (E) Salman and Terry also volunteer.

9. If Terry does not volunteer, then which one of the following CANNOT be true?

    (A) Felicia volunteers.
    (B) Leah volunteers.
    (C) Rochelle volunteers.
    (D) Salman volunteers.
    (E) Veena volunteers.

10. If Masatomo volunteers, then which one of the following could be true?

    (A) Felicia volunteers.
    (B) Leah volunteers.
    (C) Veena volunteers.
    (D) Salman does not volunteer.
    (E) Terry does not volunteer.

11. If Felicia volunteers, then which one of the following must be true?

    (A) Leah volunteers.
    (B) Salman volunteers.
    (C) Veena does not volunteer.
    (D) Exactly three of the employees volunteer.
    (E) Exactly four of the employees volunteer.

12. Which one of the following pairs of employees is such that at least one member of the pair volunteers?

    (A) Felicia and Terry
    (B) Leah and Masatomo
    (C) Leah and Veena
    (D) Rochelle and Salman
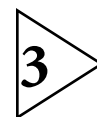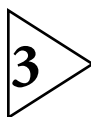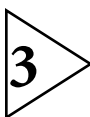   (E) Salman and Terry

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Questions 13–17

Flyhigh Airlines owns exactly two planes: P and Q. Getaway Airlines owns exactly three planes: R, S, T. On Sunday, each plane makes exactly one flight, according to the following conditions:

Only one plane departs at a time.
Each plane makes either a domestic or an international flight, but not both.
Plane P makes an international flight.
Planes Q and R make domestic flights.
All international flights depart before any domestic flight.
Any Getaway domestic flight departs before Flyhigh's domestic flight.

13. Which one of the following could be the order, from first to last, in which the five planes depart?

(A) P, Q, R, S, T
(B) P, Q, T, S, R
(C) P, S, T, Q, R
(D) P, S, T, R, Q
(E) T, S, R, P, Q

14. The plane that departs second could be any one of exactly how many of the planes?

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

15. If plane S departs sometime before plane P, then which one of the following must be false?

(A) Plane S departs first.
(B) Plane S departs third.
(C) Plane T departs second.
(D) Plane T departs third.
(E) Plane T departs fourth.

16. Which one of the following must be true?

(A) Plane P departs first.
(B) Plane Q departs last.
(C) Plane R departs second.
(D) Plane S departs first.
(E) Plane T departs fourth.

17. If plane S departs third, then each of the following can be true EXCEPT:

(A) Plane R departs sometime before plane S and sometime before plane T.
(B) Plane S departs sometime before plane Q and sometime before plane T.
(C) Plane S departs sometime before plane R and sometime before plane T.
(D) Plane T departs sometime before plane P and sometime before plane S.
(E) Plane T departs sometime before plane R and sometime before plane S.

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Questions 18–23

A student is choosing courses to take during a summer school session. Each summer school student must take at least three courses from among the following seven: history, linguistics, music, physics, statistics, theater, and writing. The summer school schedule restricts the courses a student can take in the following ways:

If history is taken, then neither statistics nor music can be taken.
If music is taken, then neither physics nor theater can be taken.
If writing is taken, then neither physics nor statistics can be taken.

18. The student could take which one of the following groups of courses during the summer school session?

(A) history, linguistics, and statistics
(B) history, music, and physics
(C) history, physics, and theater
(D) linguistics, physics, theater, and writing
(E) music, theater, and writing

19. What is the maximum number of courses the student could take during the summer school session?

(A) seven
(B) six
(C) five
(D) four
(E) three

20. If the student takes neither physics nor writing, then it could be true that the student also takes neither

(A) history nor linguistics
(B) history nor music
(C) history nor statistics
(D) linguistics nor music
(E) statistics nor theater

21. If the student takes music, then which one of the following must the student also take?

(A) writing
(B) theater
(C) statistics
(D) physics
(E) linguistics

22. The student must take one or the other or both of

(A) history or statistics
(B) linguistics or theater
(C) linguistics or writing
(D) music or physics
(E) theater or writing

23. Which one of the following, if substituted for the restriction that if music is taken, then neither physics nor theater can be taken, would have the same effect in determining which courses the student can take?

(A) If music is taken, then either statistics or writing must also be taken.
(B) The only courses that are eligible to be taken together with music are linguistics, statistics, and writing.
(C) The only courses that are eligible to be taken together with physics are history and linguistics.
(D) The only courses that are eligible to be taken together with theater are history, linguistics, and writing.
(E) If both physics and theater are taken, then music cannot be taken.

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.