SECTION III

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 1–7

A florist is making three corsages from four types of flowers: gardenias, orchids, roses, and violets. Each of the corsages will contain exactly three flowers. The nine flowers used in the corsages must include at least one flower from each of the four types, and at least twice as many roses as orchids must be used. The corsages must also meet the following specifications:

Corsage 1 must contain exactly two types of flowers.
Corsage 2 must contain at least one rose.
Corsage 3 must contain at least one gardenia but no orchids.

1. Which one of the following is an acceptable selection of flowers for the three corsages?

	Corsage 1	Corsage 2	Corsage 3
(A)	2 gardenias 1 rose	1 orchid 1 rose 1 violet	1 gardenia 1 orchid 1 violet
(B)	2 orchids 1 rose	2 orchids 1 rose	2 gardenias 1 rose
(C)	2 orchids 1 rose	3 roses	1 gardenia 2 violets
(D)	1 gardenia 1 orchid 1 rose	1 gardenia 1 rose 1 violet	1 gardenia 1 rose 1 violet
(E)	1 orchid 2 roses	3 violets	3 gardenias

2. The maximum total number of roses that can be used in the three corsages is

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

3. If corsage 1 contains two orchids and one rose, what is the maximum total number of violets that the florist can use in making the three corsages?

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

4. If corsage 2 is exactly the same as corsage 3, the nine flowers used in the corsages can include exactly

(A) two orchids
(B) three gardenias
(C) three roses
(D) five roses
(E) five violets

5. If two of the corsages contain at least one orchid each, then the flowers in corsage 2 must include at least

(A) one gardenia and one orchid
(B) one gardenia and one rose
(C) one orchid and one rose
(D) one orchid and one violet
(E) one rose and one violet

6. If the greatest possible number of violets is used in the three corsages, the florist must use

(A) exactly one rose and exactly one gardenia
(B) exactly one orchid and exactly four violets
(C) exactly two orchids
(D) exactly two roses
(E) exactly six violets

7. If corsage 1 contains at least one gardenia and at least one violet, and if corsage 3 contains three different types of flowers, which one of the following could be used to make corsage 2?

(A) one rose, one orchid, and one gardenia
(B) one rose and two orchids
(C) one rose and two violets
(D) two roses and one gardenia
(E) two roses and one violet

GO ON TO THE NEXT PAGE.

Questions 8–13

From a group of seven people—J, K, L, M, N, P, and Q—exactly four will be selected to attend a diplomat's retirement dinner. Selection must conform to the following conditions:

Either J or K must be selected, but J and K cannot both be selected.
Either N or P must be selected, but N and P cannot both be selected.
N cannot be selected unless L is selected.
Q cannot be selected unless K is selected.

8. Which one of the following could be the four people selected to attend the retirement dinner?

(A) J, K, M, P
(B) J, L, N, Q
(C) J, M, N, Q
(D) K, M, P, Q
(E) L, M, N, P

9. Among the people selected to attend the retirement dinner there must be

(A) K or Q or both
(B) L or M or both
(C) N or M or both
(D) N or Q or both
(E) P or Q or both

10. Which one of the following is a pair of people who CANNOT both be selected to attend the retirement dinner?

(A) J and N
(B) J and Q
(C) K and L
(D) K and N
(E) N and Q

11. If M is not selected to attend the retirement dinner, the four people selected to attend must include which one of the following pairs of people?

(A) J and Q
(B) K and L
(C) K and P
(D) L and P
(E) N and Q

12. If P is not selected to attend the retirement dinner, then exactly how many different groups of four are there each of which would be an acceptable selection?

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

13. There is only one acceptable group of four that can be selected to attend the retirement dinner if which one of the following pairs of people is selected?

(A) J and L
(B) K and M
(C) L and N
(D) L and Q
(E) M and Q

GO ON TO THE NEXT PAGE.

Questions 14–18

Three boys—Karl, Luis, and Miguel—and three girls—Rita, Sarah, and Tura—are giving a dance recital. Three dances—1, 2, and 3—are to be performed. Each dance involves three pairs of children, a boy and a girl partnering each other in each pair, according to the following conditions:

Karl partners Sarah in either dance 1 or dance 2.
Whoever partners Rita in dance 2 must partner Sarah in dance 3.
No two children can partner each other in more than one dance.

14. If Sarah partners Luis in dance 3, which one of the following is a complete and accurate list of the girls any one of whom could partner Miguel in dance 1?

(A) Rita
(B) Sarah
(C) Tura
(D) Rita, Sarah
(E) Rita, Tura

15. If Miguel partners Rita in dance 2, which one of the following could be true?

(A) Karl partners Tura in dance 1.
(B) Luis partners Sarah in dance 2.
(C) Luis partners Sarah in dance 3.
(D) Miguel partners Sarah in dance 1.
(E) Miguel partners Tura in dance 3.

16. If Miguel partners Sarah in dance 1, which one of the following is a pair of children who must partner each other in dance 3?

(A) Karl and Rita
(B) Karl and Tura
(C) Luis and Rita
(D) Luis and Tura
(E) Miguel and Tura

17. If Luis partners Sarah in dance 2, which one of the following is a pair of children who must partner each other in dance 1?

(A) Karl and Rita
(B) Karl and Tura
(C) Luis and Rita
(D) Luis and Tura
(E) Miguel and Rita

18. If Miguel partners Rita in dance 1, which one of the following must be true?

(A) Karl partners Rita in dance 2.
(B) Karl partners Sarah in dance 3.
(C) Karl partners Tura in dance 1.
(D) Luis partners Rita in dance 2.
(E) Luis partners Tura in dance 3.

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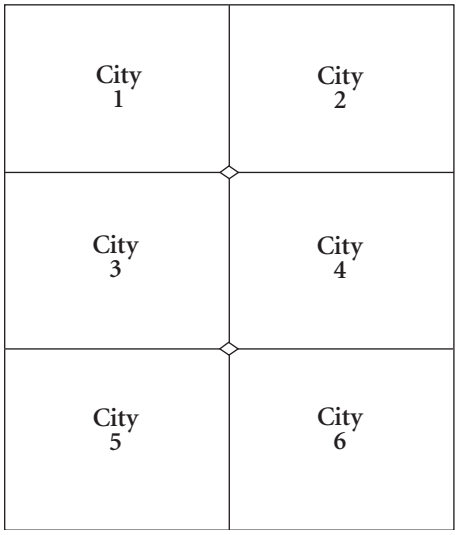
Questions 19–24

Six cities are located within the numbered areas as follows:



Within the six-city area there are exactly four hospitals, two jails, and two universities. These eight institutions are located as follows:

No institution is in more than one of the cities.
None of the cities contains more than one jail, and none contains more than one university.
None of the cities contains both a jail and a university.
Each jail is located in a city that contains at least one hospital.
The universities are located in two cities that do not share a common boundary.
City 3 contains a university, and city 6 contains a jail.

19. Which one of the following could be true?

(A) City 5 contains a university.
(B) City 6 contains a university.
(C) City 2 contains a jail.
(D) City 3 contains a jail.
(E) City 3 contains a hospital.

20. Which one of the following could be true?

(A) City 1 contains exactly one hospital.
(B) City 1 contains exactly one university.
(C) City 2 contains exactly one jail.
(D) City 5 contains exactly one university.
(E) City 6 contains exactly one university.

21. Which one of the following is a complete and accurate list of the cities any one of which could contain the jail that is not in city 6?

(A) 1, 4
(B) 2, 4
(C) 4, 5
(D) 1, 4, 5
(E) 1, 2, 4, 5

22. If each of the six cities contains at least one of the eight institutions, then which one of the following must be true?

(A) There is a jail in city 1.
(B) There is a hospital in city 2.
(C) There is a hospital in city 3.
(D) There is a hospital in city 4.
(E) There is a jail in city 4.

23. In which one of the following cities must there be fewer than three hospitals?

(A) 1
(B) 2
(C) 4
(D) 5
(E) 6

24. If one of the cities contains exactly two hospitals and exactly one university, then which one of the following lists three cities that might, among them, contain no hospital?

(A) 1, 3, 5
(B) 1, 4, 5
(C) 2, 3, 5
(D) 2, 4, 6
(E) 4, 5, 6

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.