CHAPTER 15

Advanced Exercises

PRACTICE EXERCISES

Exercise 1

Directions for questions 1 to 4: ***Read the following passage and solve the questions based on it.***

The Hotel Leela in Goa has two wings, the East wing and the West wing. Some East wing rooms, but not all, have an ocean view. All the West wing rooms have a harbor view. The charges for all the rooms are the same, except:

(i) There is an extra charge for all harbour view rooms on or above the third floor.
(ii) There is an extra charge for all ocean view rooms, except those without a balcony.
(iii) Some harbour view rooms on the first two floors and some East wing rooms without an ocean view have kitchen facilities, for which there is an extra charge.
(iv) Only the ocean view and the harbour view rooms have balconies.

Q.1 A guest can avoid an extra charge by requesting:
(a) a West wing room on one of the first two floors
(b) a West wing room on the fourth floor without a balcony
(c) an East wing room without an ocean view
(d) an East wing room without a balcony

Q.2 Which of the following must be true if all the conditions are as stated?
(a) all rooms above the third floor involve an extra charge
(b) no room without an ocean or a harbour view or kitchen facilities involves an extra charge.
(c) there is no extra charge for any East wing room without an ocean view
(d) there is no extra charge for any room without kitchen facilities.

Q.3 Which of the following must be false if all the conditions are applied?
(a) some ocean view rooms do not involve an extra charge
(b) all rooms with kitchen facilities involve an extra charge
(c) some West wing rooms above the second floor do not involve an extra charge
(d) some harbour view rooms do not involve an extra charge

Q.4 Which of the following cannot be determined on the basis of the information given?
I. whether there are any rooms without a balcony for which an extra charge is imposed
II. whether any room without a kitchen or a view involves an extra charge
III. whether two extra charges are imposed for any room
(a) I only (b) II only
(c) I and III only (d) II and III only

Directions for questions 5 to 6: ***Read the following passage and solve the questions based on it.***

Eight sets A, B, C, D, E, F, G and H are such that

(i) A is a superset of B, but a subset of C
(ii) B is a subset of D, but a superset of E
(iii) F is a subset of A, but a superset of B
(iv) G is a superset of D, but a subset of F
(v) H is a subset of B

N(A), N(B), N(C), N(D), N(E), N(F), N(G) and N(H) are the number of elements in the sets A, B, C, D, E, F, G and H respectively.

Q.5 Which one of the following could be false, but not necessarily false?
(a) E is a subset of D (b) E is a subset of C
(c) E is a subset of A (d) E is a subset of H

Q.6 If P is a new set and it is a superset of A and N(P) is the number of elements in P; then which of the following must be true?
(a) N(G) is smaller than only four numbers
(b) N(C) is the greatest
(c) N(B) is the smallest
(d) N(P) is the greatest

Directions for questions 7 to 13: ***Read the following passage and solve the questions based on it.***

The only people to attend a conference were four ship captains and their first assistants. The captains were L, M, N and O; the first assistants were A, D and G. Each person in turn delivered a report as follows:

(i) Each of the first assistants delivered his report exactly after his or her captain.
(ii) The first captain to speak was M, and capta in N spoke after him.

Q.7 Among the following which is not an appropriate order of the reports delivered?
(a) M, A, N, G, O, L, D (b) M, D, N, G, L, O, A
(c) M, N, A, L, D, O, G (d) M, N, G, D, O, L, A

Q.8 In case L speaks after A and A is the third first assistant to speak, then among the following statements which would be untrue?
(a) O spoke immediately after G
(b) the order of the first four speakers was M, G, N and D
(c) O's first assistant was present
(d) A was the fourth speaker after M

Q.9 Among the following statements which statement must be true?
(a) in case the second speaker was a captain, the seventh speaker was a first assistant
(b) in case the second speaker was a first assistant, the seventh speaker was a captain
(c) in case the third speaker was a first assistant, the seventh speaker was a captain
(d) in case the third speaker was a captain, the seventh speaker was a first assistant.

Q.10 In case A spoke immediately after L and immediately before O; and O was not the last speaker then L spoke:
(a) 2nd (b) 3rd
(c) 4th (d) 5th

Q.11 In case G is M's first assistant, D could be the person who spoke immediately
(a) before T (b) before L
(c) before V (d) after T

Q.12 A is the third first assistant to speak and L is the captain whose first assistant was not present. Which among the following statements must be true?
(a) A spoke sometime before L
(b) D spoke sometime before O
(c) L spoke sometime before O
(d) O spoke sometime before L

Q.13 Among the following statements, which would make M, D, N, G, L, O and A the only possible sequence of speakers?
(a) D is M's first assistant; G is N's first assistant and A is O's first assistant
(b) D is M's first assistant; G is N's first assistant and A was the second person to speak after L
(c) the order of the first four speakers was M, D, N and G
(d) the order of the last three speakers was L, O and A

Directions for questions 14 to 17: ***Read the following passage and solve the questions based on it.***

An employee has been assigned the task of allotting offices to six of the staff members. The offices are numbered from 1 to 6. The offices are arranged in a row and a 6-foot high divider separates them from each other. Hence, voices, sounds and cigarette smoke flow easily from one office to the other.

Ms Robert needs to use the telephone quite often throughout the day. Mr Mike and Mr Brown need adjacent offices as they need to consult each other often while working. Ms Hardy is a senior employee and has to be allotted the office number 5 which has the biggest window.

Mr Donald requires silence in the offices next to his. Mr Tim, Mr Mike and Mr Donald are all smokers. Ms Hardy is allergic to tobacco smoke and consequently the offices next to her are to be occupied by non- smokers.

Unless specifically stated, all the employees maintain an atmosphere of silence during the office hours.

Q.14 Who would be the ideal candidate to occupy the office farthest from Mr Brown?
(a) Ms Hardy (b) Mr Mike
(c) Mr Tim (d) Mr Donald

Q.15 The three employees who are smokers should be seated in which offices?
(a) 1, 2 and 4 (b) 2, 3 and 6
(c) 1, 2 and 6 (d) 1, 2 and 3

Q.16 Which would be the ideal office for Mr Mike?
(a) 2 (b) 6
(c) 1 (d) 3

Q.17 In the event of what occurrence, within the period of one month since the assignment of the offices, would a request for a change in office be put forth by one or more employees?
(a) Mr Donald quitting smoking
(b) the installation of a noisy machine by Ms Hardy in her office
(c) Ms Robert needing silence in the office(s) next to her own
(d) Mr Tim taking over the duties formerly taken care of by Ms Robert.

Directions for questions 18 to 23: ***Read the following passage and solve the questions based on it.***

Nine individuals—Z, Y, X, W, V, U, T, S and R are the only candidates who can serve on three committees–A, B and C: and each candidate can serve on only one of the committees. The following conditions are given

(i) Committee A should consist of exactly one member more than committee B.
(ii) It is possible that there are no members of committee C
(iii) Z, Y and X cannot serve on committee A
(iv) W, V and U cannot serve on committee B
(v) T, S and R cannot serve on committee C

Q.18 In case T and Z are the individuals serving on committee B, how many of the nine individuals should serve on committee C?
(a) 3 (b) 4
(c) 5 (d) 6

Q.19 Out of the nine individuals, the largest number that can serve together on committee C is
(a) 9 (b) 8
(c) 7 (d) 6

Q.20 In case R is the only individual serving on committee B, which among the following should serve on committee A?
(a) W and S (b) V and U
(c) V and T (d) T and S

Q.21 In case any of the nine individuals serve on committee C, then which among the following should be the candidate to serve on committee A?
(a) Z (b) Y
(c) W (d) None of these

Q.22 In case T, S and X are the only individuals serving on committee B, the total members of committee C would be:
(a) Z and Y (b) Z and W
(c) Y and V (d) Y and U

Q.23 Among the following combinations, which could constitute the membership of committee C?
(a) Y and T (b) X and U
(c) Y, X and W (d) W, V and U

Directions for question 24 and 25: ***Read the following passage and solve the questions based on it.***

Q.24 A TV programme coordinator is planning a schedule which has 8 slots numbered A to H. The programme must consist of the following: One video of Yannie, two ads, one video of Ricky Martin and four videos of Jenniferhopez, but not necessarily in the same order. Each of these must be shown only once during the program according to the following conditions:

(i) Two ads cannot be shown continuously.
(ii) The programme must begin with either an ad or a video of Yannie and must end with either an ad or a video of Yannie. If the video of Yannie is aired in slot D and if exactly two out of the four videos of Jennifer Lopez are played consecutively then the Ricky Martin video must be aired in which slot number

(a) E (b) F
(c) D (d) B

Q.25 The CEO of a company must appoint a committee of 5 persons from different fields to serve as committee members. He must select two MBAs from A, B and C and three Engineers from D, E, F, G and H.

(i) Both B and H, cannot be appointed in the committee.
(ii) Both G and F, cannot be appointed in the committee.
(iii) Both E and H, cannot be appointed in the committee.

If C is not selected in the committee then any of the following could be in the committee except
(a) D (b) H
(c) E (d) G

Exercise 2

Directions for questions 1 to 4: ***Read the following passage and solve the questions based on it.***

Each group of questions in this section is based on a set of conditions. In while answering some questions, it may be useful to draw a rough diagram. Choose the response that most accurately and completely answers each question.

A company wants to select a team of four call center executives from its centre based in South India for a transfer to their newly set up centre in north India. The company is managed by professional managers and is very particular about human resources and Personal relations. There are seven team members of equal ability: X, Y and Z (who are senior), and A, B, C and D (who are junior). The company requires two senior executives and two junior in the team. It is necessary that all the executives in a particular team are friendly with each other, in order to maintain team spirit and avoid any personal relation problems in the new centre. The relationship between the seven executives is as follows:

(i) Y and A are not friendly
(ii) Z and C are not friendly
(iii) A and B are not friendly

Q.1 If A is on the team, then which other executives must be on the team as well?
(a) X, Y and D (b) X, Z And D
(c) X, Z and B (d) X, Z and C

Q.2 Which statement(s) must be false?

I. Y and C are never selected together
II. Z and B are never selected together
III. Z and D are never selected together

(a) I only (b) I and II only
(c) I and III only (d) I, II and III

Q.3 If both Y and Z are selected, which of the executives must be on the team with them?

(a) Both C and D (b) Only D
(c) Both B and A (d) Both B and D

Q.4 Which of the following statements are true for X?

I X must be selected as one of the senior executives on the team
II X must be selected, if C is selected
III X cannot be selected, if both A and C are rejected.

(a) I only (b) II only
(c) II and III (d) I, II and III

Directions for questions 5 to 9: ***Read the following passage and solve the questions based on it.***

Five different kinds of sweets to be given to the children: Halwa, Burfi, Laddu, Kaala jamun, Rasgulla. The children, Joginder, Kedarnath, Girish, Trilochan and Rameshwar went to see K. C. Das, who gave sweets to each one of them as per the following details.

(i) Kedarnath got either *burfi* or *rasgulla*.
(ii) Trilochan did not receive *laddu* or *kaala-jamun*.
(iii) Among the five children, one received *laddu* and one *burfi.*
(iv) No other child received the same treat as Kedarnath.
(v) Neither Joginder nor Girish got *kaala-jamun*.
(vi) At least one child received *kaala-jamun*.

Q.5 What sweet did Rameshwar receive?

(a) *Halwa* (b) *Burfi*
(c) *Laddu* (d) *Kaala-Jamun*

Q.6 If Kedarnath received *Rasgulla*, which of the following must be true?

(a) If Joginder received *laddu*, Girish received *halwa*.
(b) If Joginder received *burfi*, Girish received *halwa*.
(c) If Joginder received *halwa*, Trilochan received *burfi*.
(d) If Girish received *laddu*, Trilochan received *rasgulla*.

Q.7 If Trilochan received *halwa*, which of the following is a complete and accurate list of the children who could have received laddu?

(a) Joginder and Kedarnath
(b) Kedarnath and Girish
(c) Rameshwar and Girish
(d) Joginder and Girish.

Q.8 If Kedarnath received *burfi*, which of the following must be false?

(a) If Joginder received *laddu*, Girish received *halwa*.
(b) If Joginder received *halwa*, Trilochan received *rasgulla*.
(c) If Joginder received *rasgulla*, Girish received *halwa.*
(d) If Girish received *laddu*, Trilochan received *rasgulla*.

Q.9 If Girish received *burfi*, which of the following must be false?

(a) Joginder received *laddu*
(b) Trilochan received *halwa*
(c) Kedarnath received *rasgulla*
(d) Trilochan received *rasgulla*

Directions for questions 10 to 12: ***Read the following passage and solve the questions based on it.***

Shiva spent 14 days exclusive of travel in a total of six cities.

Each cities that he visited was in either one of the three states: Gujarat, Uttar Pradesh, Maharashtra. Each of the states has many city. Shiva visited at least one city in each of the three states. He spent at least two days in each city. He spent the whole day in each of the cities that he visited.

Q.10 If Shiva spent exactly eight days in the various cities of Gujarat, then which one of the following cannot be true?

(a) He visited exactly two cities in Maharashtra.
(b) He visited exactly two cities in Uttar Pradesh.
(c) He visited exactly two cities in Gujarat.
(d) He visited more cities in Uttar Pradesh than in Maharashtra.

Q.11 If the city of Ahmedabad is in Gujarat and Shiva spent as many days as possible in Ahmedabad and as few days as possible in each of the other cities that he visited, then which one of the following must be true?

(a) Shiva could not visit any other city in Gujarat.
(b) Shiva could visit four cities in Uttar Pradesh.
(c) Shiva could spend six days in Ahmedabad.
(d) Shiva could not spend more than four days in Maharashtra.

Q.12 If Shiva spent three days in the cities of Uttar Pradesh and seven days in the cities of Maharashtra, then which one of the following must be false?

(a) He visited more cities in Gujarat than in Uttar Pradesh.
(b) He visited exactly three cities in Maharashtra
(c) He visited more cities in Maharashtra than in Gujarat.
(d) He visited exactly two cities in Maharashtra.

Directions for questions 13 to 17: ***Read the following passage and solve the questions based on it.***

There are six teachers, viz., A, B, C, D, E and F in a school. Each of the teachers teaches two subjects, one compulsory and one optional subject. D's optional subject was History while three of the other teachers have it as their compulsory subject. E and F have Physics as one of their subjects. F's compulsory subject is Mathematics which is an optional subject for both C and E. History and English are A's subjects but in terms of compulsory and optional subjects, they are just the reverse of D's subjects. Chemistry is an optional subject for only one of them. The only female teacher in the school has English as her compulsory subject.

Q.13 What is C's compulsory subject?
(a) History (b) Physics
(c) Chemistry (d) English

Q.14 Who is the female member in the group?
(a) A (b) B
(c) C (d) D

Q.15 Which of the following has the same compulsory and optional subjects as F?
(a) D (b) B
(c) A (d) None of these

Q.16 Disregarding which is the compulsory and which is the optional subject, who has the same two subject combinations as F?
(a) A (b) B
(c) E (d) D

Q.17 Which of the following groups has History as their compulsory subject?
(a) A, C, D (b) B, C, D
(c) C, D (d) A, B, C

Q.18 Eight books are kept one over the other. Counting from the top the second, fifth and the sixth books are on plays. Two books on plays are kept between two books on compositions. One book of plays is between two books on poetry while the book kept at the top of the book of Literature is a book of composition. Which book is fourth from the top?
(a) Plays (b) Poetry
(c) Composition (d) Literature

Directions for questions 19 to 21: ***Read the following passage and solve the questions based on it.***

The after sales service manager of White Goods Appliances Ltd is making an assignment roster for the three technician teams in the city of Indraprastha. Each team will be assigned one of the sectors of the city: sector Pratham, sector Dwitiya and sector Tritiya. Each team will consist of two out of the following technicians: Nagabhushanam, Phaneesh, Ramaswamy, Swaminathan, Tirthankar and Visheshwar. Each technician will be assigned to exactly one team. Ramaswamy, Tirthankar and Visheshwar have each completed a special electro-mechanical appliances maintenance training programme; whereas Naghbhushanam, Phaneesh and Ramaswamy each has at least five years of work experience; Swaminathan, Tirthankar and Visheshwar do not. The service manager must observe the following restrictions while making the assignment roster:

(i) Each team must include at least one technician who has completed the special training.
(ii) Each team must include at least one technician who has at least five years of work experience.
(iii) Nagabhushanam must be assigned to sector Pratham or sector Dwitiya.

Q.19 If Phaneesh is assigned to sector Dwitiya, which of the following must be true?
(a) Tirthankar is assigned to sector pratham
(b) Swaminathan is assigned to sector Tritiya
(c) Visheshwar is assigned to sector Dwitiya
(d) Visheshwar is assigned to sector Tritiya

Q.20 The service manager cannot make an acceptable roster that assigns:
(a) Phaneesh to sector Pratham and Visheshwar to sector Tritiya
(b) Ramaswamy to sector Pratham and Tirthankar to sector Dwitiya
(c) Swaminathan to sector Pratham and Nagabhushanam to sector Dwitiya
(d) Nagabhushanam to sector Dwitiya and Phaneesh to sector Tritiya

Q.21 If Tirthankar is assigned to sector Tritiya, which of the following must be true?
(a) Phaneesh is assigned to sector Pratham
(b) Ramaswamy is assigned to sector Dwitiya
(c) Tirthankar is Nagabhushanam's partner
(d) Nagabhushanam is Visheshwar's partner

Directions for questions 22 to 25: ***Read the following passage and solve the questions based on it.***

An inexperienced Yoga teacher, posing as an expert on yogic exercises (*asanas*) prescribed a schedule of exercises for a pupil. Choosing from exercises *Anubittasana, Bhujangasana, Chakrasana, Dhanurasana*, *Sukhasana, Tadasana, Ushtrasana* and *Vyagrasana*, the pupil must perform a routine of exactly five different *asanas* each day. In any day's routine, except the first day, exactly three of the exercises must be the ones that were included in the routine of the previous day, and any permissible routine must also satisfy the following conditions:

(i) If *Anubittasana* is in routine. *Ushtrasana* cannot be done in that routine.
(ii) If *Bhujangasana* is in a routine, *Sukhasana* must be one of the exercises done after *Bhujangasana* in that routine.
(iii) If *Chakrasana* is in a routine, *Ushtrasana* must be one of the exercises done after *Chakrasana* in that routine.

(iv) The fifth exercise of any routine must be either *Dhanurasana* or *Tadasana*.

Q.22. If one day's routine is *anubittasana, bhujangasna, vyagrasna, sukhasana* and *tadasana*, each of the following could be the next day's routine, except:
(a) *Bhujangasna, Chakrasana, Vyagrasana, Sukhasana, Tadasana*
(b) *Bhujangasna, sukhasana, Ushtrasana, Vyagrasana, Dhanurasana*
(c) *Vyagsana, Sukhasana, Tadasana, Ushtrasana, Dhanurasana*
(d) *Vyagsana, Sukhasana, Dhanurasana, Anubittasana, Tadasana*

Q.23. Which of the following is true for any permissible routine?
(a) *Anubittasana* cannot be the third exercise
(b) *Bhujangasana* cannot be the third exercise
(c) *Chakrasana* cannot be the fourth exercise
(d) *Tadasana* cannot be the fourth exercise

24. If the pupil chooses *Chakrasana* and *Vyagrasana* for the first day's routine, which of the following could be the other three exercises chosen?
(a) *Anubiittasana, Sukhasana, Tadasana*
(b) *Bhujangasana, Dhanurasana, Ushtrasanas*
(c) *Bhujangasna, Sukhansana, Ushtrasana.*
(d) *Sukhasana, Dhanusarana, Vyagrasana.*

25. If *Chakrasana* is the third exercise in a routine, which of the following cannot be the second exercise?
(a) *Bhujangasna* (b) *Dhanurasna*
(c) *Sukhasana* (d) *Tadasana*

Exercise 3

Each group of questions in this section is based on a set of conditions. While 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.

Directions for questions 1 to 5: ***Read the following passage and solve the questions based on it.***

Seven instructors—J, K, L, M, N, P and Q, teach management courses at a premier institute in east India. Each instructor teaches during only one term; either the first term, or the second term, or the third term. The following conditions apply:

(i) K teaches during the third term.
(ii) L and M teach during the same term.
(iii) Q teaches during either the first term or the second term.
(iv) Exactly twice as many instructors teach during the third term as compared to the first term.
(v) N and Q teach during different terms.
(vi) J and P teach during different terms.

Q.1 Which one of the following could be an accurate matching of the instructors to their respective terms?
(a) M: the first term; P: the second term; Q: the first term
(b) J: the third term; L: the third term; P: the third term
(c) L: the first term; N: the second term; P: the third term
(d) J: the first term; M: the third term; N: the second term

Q.2 Which one of the following cannot be true?
(a) L teaches during the first term
(b) M teaches during the second term
(c) M teaches during the third term
(d) N teaches during the second term

Q.3 If exactly one instructor teaches during the second term, which one of the following must be true?
(a) J teaches during the third term
(b) L teaches during the first term
(c) M teaches during the third term
(d) P teaches during the second term

Q.4 Each of the following contains a list of instructors who can all teach during the same term except
(a) J, K, M (b) J, L, M
(c) K, L, P (d) K, P, Q

Q.5 If more instructors teach during the second term as compared to the first term, then which one of the following instructors must teach during the second term?
(a) J (b) M
(c) N (d) P

Directions for questions 6 to 10: ***Read the following passage and solve the questions based on it.***

Sourav's Fish Salon serves a special Friday night sea-food banquet consisting of seven courses: hilsa, pomfret, Indian shrimp, rahu, kingfish, lobster, and bhetki. Diners are free to select the order of the seven courses, according to the following conditions:

(i) The kingfish is served sometimes after rahu.
(ii) Exactly one course should be served between the pomfret and the Indian shrimp.
(iii) The lobster is served some time before the pomfret.
(iv) The kingfish is either the fifth or the course to be reserved sixth. The hilsa is the second course to be served.

Q.6 Which one of the following sequences would make for an acceptable banquet?
(a) Rahu, hilsa, lobster, bhetki, pomfret, kingfish, Indian shrimp

(b) Rahu, hilsa, bhetki, pomfret, kingfish, Indian shrimp, lobster
(c) Lobster, hilsa, pomfret, rahu, kingfish, Indian shrimp, bhetki
(d) Lobster, hilsa, rahu, kingfish, pomfret, bhetki, Indian shrimp

Q.7 If the kingfish is the fifth course served, then which one of the following must be true?
(a) Pomfret is the third course served
(b) Indian shrimp is the fourth course served
(c) Bhetki is the seventh course served
(d) Lobster is the first course served

Q.8 Which one of the following would make it possible to determine the exact order of the course?
(a) Pomfret is the fourth course served
(b) Indian shrimp is the fifth course served
(c) Kingfish is the sixth course served
(d) Lobster is the first course served

Q.9 If kingfish is the sixth course served, then which one of the following cannot be true?
(a) Rahu is the fifth course served
(b) Indian shrimp is the seventh course served
(c) Pomfret is the fifth course served
(d) Lobster is the third course served

Q.10 If bhetki is the third course served, which one of the following must be true?
(a) Pomfret is the fourth course served
(b) Kingfish is the fifth course served
(c) Rahu is the first course served
(d) Indian shrimp is the seventh course served

Directions for questions 11 to 16: ***Read the following passage and solve the questions based on it.***

During one week, a human resource director conducts five interviews for a new job; one interview per day, Monday through Friday. There are six candidates for the job: Ram, Shyam, Trilochan, Usha, Veena and Kishore. Not more than two candidates are interviewed more than once. Neither Shyam nor Usha nor Veena is interviewed more than once, and no other candidate is interviewed more than twice. The schedule of interviews is subject to the following conditions:

(i) If Trilochan is interviewed, then he must be interviewed on Monday and Friday.
(ii) If Shyam is interviewed, then Usha is also interviewed; with Shyam's interview taking place earlier than Usha's interview.
(iii) If Ram is interviewed twice, then Ram's second interview takes place exactly two days after his first interview.
(iv) If Veena is interviewed, then Kishore is interviewed twice; with Veena's interview taking place after Kishore's first interview and before his second interview.
(v) If Usha is interviewed, then Ram is also interviewed; with Usha's interview taking place on a day either immediately before or immediately after a day on which Ram is interviewed.

Q.11 Which of the following could be a complete and accurate list of candidates that the human resources director interviews and the days on which those interviews take place?
(a) Monday: Shyam; Tuesday: Usha; Wednesday: Ram; Thursday: Kishore; Friday: Ram
(b) Monday: Shyam; Tuesday: Kishore; Wednesday: Ram; Thursday: Kishore; Friday: Usha
(c) Monday: Trilochan; Tuesday: Ram; Wednesday: Shyam; Thursday: Ram; Friday: Trilochan
(d) Monday: Trilochan; Tuesday: Ram; Wednesday: Kishore; Thursday: Veena; Friday: Trilochan

Q.12 If Veena is interviewed on Tuesday, then which one of the following must be true?
(a) Trilochan is interviewed on Friday
(b) Usha is interviewed on Thursday
(c) Ram is not interviewed
(d) Shyam is not interviewed

Q.13 If Kishore is not interviewed, then which one of the following must be true?
(a) Ram is interviewed on Thursday
(b) Shyam is interviewed on Tuesday
(c) Trilochan is interviewed on Monday
(d) Usha is interviewed on Wednesday

Q.14 If Shyam is interviewed, then which one of the following could be true?
(a) Kishore is interviewed on both Tuesday and Wednesday
(b) Usha is interviewed on Monday
(c) Veena is interviewed on Tuesday
(d) Shyam is interviewed on Thursday

Q.15 If neither Usha nor Trilochan are interviewed, then each of the following must be true except:
(a) Ram is interviewed on Monday
(b) Ram is interviewed on Thursday
(c) Veena is interviewed on Tuesday
(d) Kishore is interviewed on Wednesday

Q.16 If both Usha and Veena are interviewed, then which one of the following is a complete and accurate list of the days on which Kishore could be interviewed?
(a) Monday, Friday
(b) Tuesday, Thursday
(c) Monday, Wednesday, Friday
(d) Tuesday, Wednesday, Thursday

Directions for questions 17 to 21: ***Read the following passage and solve the questions based on it.***

K. C. Das is preparing special for the sweet packages *Puja*. Different sweet packages are numbered 1 through 5 from left to right, and K. C. Das fills them with different sweets.

Each package will contain at least one, but not more than two of the following types of sweets: *Gulabjamun, Kaju Barfi, Petha*, *Rasgulla, Sohan Halwa* and *Cham Cham*. Each type of sweet will be placed in at least one sweet package. These sweets will be packed either in a bucket, a carton or a tin. K. C. Das fills the package according to the following conditions:

(i) At least two packages must contain *Rasgulla*.
(ii) Exactly two packages must contain *Kaju Barfi*, and these packages cannot be adjacent to each other.
(iii) Both packages that contain *Kaju Barfi* must be to the left of any package that contains *Gulabjamun*.
(iv) Package 2, 3 and 4 cannot contain *Sohan Halwa*
(v) Any package that contains *Rasgulla* must be packed in a carton.
(vi) Any package that contains *Kaju Barfi* must be packed in a bucket.
(vii) Package 2 is packed in a carton.

Q.17 Which one of the following cannot be true?
(a) Package 1 is packed in a tin
(b) Package 2 contains *Cham Cham*
(c) Package 3 is packed in a tin
(d) Package 4 contains *Kaju Barfi*

Q.18 If a package containing sweets packed in a tin is not adjacent to a package packed in a bucket, then which one of the following must be true?
(a) Package 1 contains *Petha*
(b) Package 4 contains *Kaju Barfi*
(c) Package 4 contain *Rasgulla*
(d) Package 5 contains *Gulabjamun*

Q.19 If *Rasgullas* are contained in the maximum number of packages, which one of the following must be true?
(a) Package 3 is packed in a bucket
(b) Package 4 is packed in a bucket
(c) A package containing *Sohan Halwa* is packed in a bucket
(d) A package containing *Gulabjamun* is packed in a carton.

Q.20 If package 4 contains *Petha* and *Cham Cham*, which one of the following pairs of sweets must be contained in the same package?
(a) *Kaju Barfi* and *Sohan Halwa*
(b) *Gulabjamun* and *Petha*
(c) *Rasgulla* and *Cham Cham*
(d) *Gulabjamun* and *Sohan Halwa*

Q.21 If package 3 is packed in a tin, which one of the following could be false?
(a) Package 1 contains *Sohan Halwa*
(b) Package 2 contains *Rasgulla*
(c) Package 3 contains *Cham Cham*
(d) Package 4 is packed in a bucket

Directions for questions 22 to 25: ***Read the following passage and solve the questions based on it.***

Six horses named Aparajit, Bahadur. Chetak, Dhundumar, Pakshiraj, and Vijay are entered in a race. The big starting gate is divided into exactly seven positions numbered consecutively 1 to 7. Seven jockeys, also numbered from 1 to 7 are eligible to ride the horses in the race. Each jockey's number corresponds to the numbered position on the starting gate from which that jockey, if assigned to a horse, will ride. Exactly one jockey will not be assigned to any of the horses and the starting gate position corresponding to that jockey's number will remain vacant for the race. Jockeys will be assigned horses and the horses will run from the starting gate position in accordance with the following restrictions:

(i) Either Aparajit or Chetak must be ridden by Jockey 1.
(ii) Pakshiraj must be ridden by Jockey 4 or else by Jockey 5.
(iii) Bahadur and Pakshiraj must have at least one horse separating the two of them at starting gate.
(iv) Chetak must run from a starting gate position which has a lower number than the starting gate position from which Vijay runs.

Q.22 If the horses complete the race, from the first to the last, in exactly the order 6, 5, 4, 3, 2 and 1 (corresponding to the number of their jockeys); and if Bahadur is the horse that wins the race, then each of the following horses could have been among the top three in the race except:
(a) Chetak (b) Dhundumar
(c) Pakshiraj (d) Vijay

Q.23 If Jockey 5 is the one not assigned to any horse, which of the following could be true?
(a) Aparajit is ridden by Jockey 4
(b) Vijay is ridden by Jockey 6
(c) Bahadur is ridden by Jockey 6
(d) Chetak is ridden by Jockey 7

Q.24 If Dhundumar is incapable of running the race and no replacement horse is found; and if the horses that run, finish the race from the first to the last, in the order 1, 2, 4, 6 and 7 (corresponding to the numbers of their jockeys) then which of the following must have finished last in the race?
(a) Aparajit (b) Bahadur
(c) Chetak (d) Pakshiraj

Q.25 If Chetak runs from the starting gate position 5 and the starting gate position 6 is vacant, then which of the following must be true?
(a) Vijay starts from the starting gate position 2
(b) Aparajit starts from the starting gate position 1
(c) Pakshiraj starts from the starting gate position 3
(d) Dhundumar starts from the starting gate position 3

EXERCISE 4

Directions for questions 1 to 3: ***Read the following passage and solve the questions based on it.***

The National Museum Curator must group nine sculptures—Q, R, S, T, V, W, X, Y and Z in tables numbered consecutively from 1–12. The sculptures will be placed in three groups, each group representing a different period of the Indian civilization. The groups must be separated from each other by at least one unused table, but unused tables cannot occur within any group. Three of the sculptures are from the Indus Valley Civilization period (3000 BC–1500 BC), two are from the Mauryan period (322 BC–185 BC) and four are from the Gupta empire period (AD 320– AD 540).

The following table gives the period details of the different sculptures:

(i) T, V, W are all sculptures from the same period
(ii) R and T are sculptures from different periods
(iii) Q and X are the Indus Valley Civilization period sculptures
(iv) Y is the Mauryan period Sculpture
(v) table 5 is always empty

Q.1 If the sculptures are placed in a reverse chronological order by their periods, the unused table spaces could be:
(a) 1, 6 and 9 (b) 1, 5 and 10
(c) 5, 8 and 12 (d) 5, 9 and 10

Q.2 If the Gupta Dynasty sculptures are placed on tables 1–4, which of the following cannot be true?
(a) X is placed on table 12
(b) Y is placed on table 9
(c) table 8 is unused
(d) Q is placed on table 6

Q.3 If the first five sculptures, in the numerical order of their tables are Q, Z, X, Y and R, which of the following must be true?
(a) Two unused tables separate the Harappan period and the Maurya period sculptures
(b) Two unused tables separate the Mauryan period and the Gupta period sculptures
(c) S is placed on table 2
(d) Either table 1 or table 4 is unused

Directions for questions 4 to 6: ***Read the following passage and solve the questions based on it.***

A business school publishes three issues of their research Journal in a year. The editor decided that the upcoming three issues April, August and December would carry articles written by seven of the most reputed professors of the school. Each of the seven authors (T, U, V, W, X, Y and Z) will have at least one article published but some may have more than one article published. The following restrictions apply to the publication of the articles:

(i) Each of the issues being prepared must contain at least two articles.
(ii) Only these seven professors' articles can appear in the upcoming April, August and December issues.
(iii) No author may publish in each of the two consecutively published issues or twice in the same issue.
(iv) If an article written by T appears in an issue, then an article written by U must also appear in that issue.
(v) If an article written by W appears in an issue, then an article written by Y must appear in the immediately preceding issue.
(vi) An article written by Y cannot be published in an issue that contains an article written by Z.

Q.4 If the April issue consists exclusively of articles written by T and U, then the August issue can consist exclusively of articles written by which of the following group of authors?
(a) V and X (b) V and Y
(c) W and Z (d) V, Y and Z

Q.5 If the April issue consists exclusively of articles written by U, V and Z, then the August issue must contain an article written by which of the following authors?
(a) W (b) X
(c) Y (d) Z

Q.6 If the December issue consists exclusively of articles written by U, V and W, then the August issue must have consisted of articles written by which of the following groups of authors?
(a) T and Z (b) U and Y
(c) X and Y (d) X and Z

Directions for questions 7 to 9: ***Read the following passage and solve the questions based on it.***

The CBI was keeping an eye on four suspected lady criminals—Meenakshi, Razia, Sharmila and Theresa while monitoring their movements in and out of a multi-storey building they discovered a pattern and made the following observations:

(i) No suspect ever entered or left the building together with another suspect.
(ii) Each of the suspects entered and later left the building, only once every day.
(iii) No suspect ever left the building in the same order (first, second, third and fourth) in which she entered the building
(iv) Both while entering the building and leaving, Razia was always earlier than Sharmila.

Q.7 On a certain day, the two suspects who entered the building first were also the first to leave. Then the last two suspects to enter the building could be
(a) Meenakshi and Razia
(b) Meenakshi and Theresa
(c) Razia and Sharmila
(d) Razia and Theresa

Q.8 On a certain day, Meenakshi and Theresa were the second and the third suspected enter the building and Meenakshi also left the building before Theresa did, Then the order in which the suspects left the building, from the first to the fourth, must be

(a) Meenakshi, Razia, Sharmila, Theresa
(b) Meenakshi, Razia, Thersa, Sharmila
(c) Razia, Meenakshi, Sharmila, Theresa
(d) Razia, Sharmila, Meenakshi, Theresa

Q.9 On a day when Razia was the second suspect to enter the building and Theresa was the third, which of the following must be true?

(a) Razia leaves the building first
(b) Meenakshi leaves the building first
(c) Meenakshi leaves the building third
(d) Theresa leaves the building second

Directions for questions 10 to 13: ***Read the following passage and solve the questions based on it.***

On the occasion of the New Year celebrations, eight families went to Goa. Each member of the various families spent a particular amount during the carnival, but the total amount spent by any family was always an integer. Given below is the average amount spent by each member of the various families:

Name of the family	Average amount spent per person	Name of the family	Average amount spent per person	Name of the family	Average amount spent per person	Name of the family	Average amount spent per person
Gagan	2.125	Lapa	3.1428	Rio	2.111	Apang	3.25
Kumar	3.166	Zora	4.5	Chaman	5.20	Sarkar	4.33

(i) The number of members in the Gagan family was four more than that of the Chaman family.
(ii) The number of members of the Apang family was half of that of the Sarkar family.
(iii) The number of members in the Chaman family was less than the sum of that of the Lapa and the Zora.
(iv) Sum of the number of members of the Lapa family and the Zora family was 28.
(v) The sum of the members of the Sarkar family and the Apang family was equal to the number of the members of the Rio family as well as the Kumar family.
(vi) The number of persons in any family varied between 12 and 36.

Q.10 What was the total sum of the amount spent by the Lapa and the Zora families?

(a) 107 (b) 111
(c) 134 (d) 136

Q.11 What was the total amount spent by all the families?

(a) 595 (b) 677
(c) 744 (d) 750

Q.12 If 1/6th of the number of members of the Apang, Gagan and Kumar families were adults and the rest were children, then what was the total number of children in all the three families?

(a) 60 (b) 70
(c) 80 (d) 90

Q.13 What was the total number of members who visited Goa?

(a) 210 (b) 200
(c) 190 (d) 180

Directions for questions 14 to 17: ***Read the following passage and solve the questions based on it.***

A, B, C, D and E are members of a detective agency. To maintain impersonification, they operate under the code names P, Q, R, S and T, not necessarily in the same order. Following are the details pertaining to their impersonification:

(i) If B is R, then D is S
(ii) If A is Q, then C is S
(iii) If D is not T, then E is S
(iv) A is Q if and only if B is S or P
(v) If C is not T then, B is not P
(vi) D is R, and E is not S if and only if B is Q
(vii) If A is R, then C is T

Q.14 Who operates under the name of R?

(a) A (b) B
(c) C (d) D

Q.15 Who operates under the name of Q?

(a) A (b) D
(c) C (d) E

Q.16 Who operates under the name of S?

(a) E (b) A
(c) C (d) D

Q.17 Under what name does C operate?

(a) P (b) Q
(c) R (d) S

Directions for questions 18 to 19: ***Read the following passage and solve the questions based on it.***

A, B, C, D and E competed at the Delhi half marathon, and ranked first through fifth.

The following is the conversation recorded after the marathon:

A: "I was not last"
B: "C got the bronze"
C: "A ended behind E"
D: "E got silver"
E: "D didn't get gold"

It is also given that the 1st, 2nd and the 3rd rankers won the Gold, Silver and the Bronze Modals respectively.

The gold and silver medalists lied, but the other three told the truth.

Q.18 Who among the following won the gold medal?
(a) A
(b) B
(c) E
(d) Cannot be determined

Q.19 Which of the following statements are not true?
I. A won the bronze medal.
II. E won the silver medal.
III. C ended behind A, who ended behind E.
IV. D ended behind B.
(a) I and II (b) II and III
(c) III and IV (d) I and IV

Directions for questions 20 to 22: ***Read the following passage and solve the questions based on it.***

A professor gave five projects—1, 2, 3, 4 and 5 to five students–S, C, L, M and R as a part of the internal group assessment programme. He gave it to them at 7 p.m. The following table gives the time taken by each of them in finishing the different assignments and the time at which each of them goes to sleep.

Student	Time taken to complete projects (in hour's)					Time of going to sleep
	1	2	3	4	5	
S	2	5	1.5	3	5	10 p.m
C	4	2	3	1	4	11 p.m
L	1	3	4	2	1.5	9 p.m
M	1.5	2.5	3.5	3	3	10 p.m
R	5	4	3.5	2	4	12 Midnight

In case of an internal group assessment programme, all the assignments are needed to be done but not necessarily by each one of them. Hence, the group decides that each one of them will do exactly one project out of the given five projects.

20. What is the least time in which the group assignment will be done?
(a) 1.5 hours (b) 2 hours
(c) 2.5 hours (d) 3 hours

21. What is the cumulative time spent by all of them if they finish it in the minimum possible time?
(a) 7.5 hours (b) 8.5 hours
(c) 9 hours (d) 10 hours

22. The assignment has to be finished on that particular calendar day only. What is the maximum possible time in which this assignment will be done?
(a) 3.5 hours (b) 4 hours
(c) 4.5 hours (d) 5 hours

Directions for questions 23 to 25: ***Read the following passage and solve the questions based on it.***

Mohan went to the market and bought a few oranges, mangoes and bananas. He bought a total of 42 fruits. The details of the fruits purchased is as follows:

(i) The number of bananas is less than half the number of oranges
(ii) The number of mangoes is more than 1/3rd the number of oranges
(iii) The number of mangoes is less than 3/4th the number of bananas.

23. How many oranges did Mohan buy?
(a) 17 (b) 21
(c) 23 (d) 26

24. How many bananas did Mohan buy?
(a) 6 (b) 9
(c) 11 (d) 13

25. How many mangoes did Mohan buy?
(a) 6 (b) 9
(c) 8 (d) 14

ANSWER KEYS

EXERCISE 1

1. (d) **2.** (b) **3.** (c) **4.** (a) **5.** (d) **6.** (a) **7.** (d) **8.** (d) **9.** (a) **10.** (c)
11. (b) **12.** (b) **13.** (b) **14.** (d) **15.** (d) **16.** (d) **17.** (b) **18.** (b) **19.** (d) **20.** (d)
21. (c) **22.** (a) **23.** (b) **24.** (b) **25.** (b)

Exercise 2

1. (b)	**2.** (d)	**3.** (d)	**4.** (b)	**5.** (d)	**6.** (c)	**7.** (d)	**8.** (c)	**9.** (d)	**10.** (c)
11. (b)	**12.** (d)	**13.** (d)	**14.** (d)	**15.** (d)	**16.** (c)	**17.** (d)	**18.** (c)	**19.** (b)	**20.** (a)
21. (d)	**22.** (a)	**23.** (c)	**24.** (b)	**25.** (a)					

Exercise 3

1. (d)	**2.** (a)	**3.** (c)	**4.** (d)	**5.** (b)	**6.** (a)	**7.** (c)	**8.** (b)	**9.** (a)	**10.** (d)
11. (a)	**12.** (d)	**13.** (c)	**14.** (a)	**15.** (d)	**16.** (c)	**17.** (a)	**18.** (c)	**19.** (a)	**20.** (a)
21. (c)	**22.** (a)	**23.** (c)	**24.** (a)	**25.** (b)					

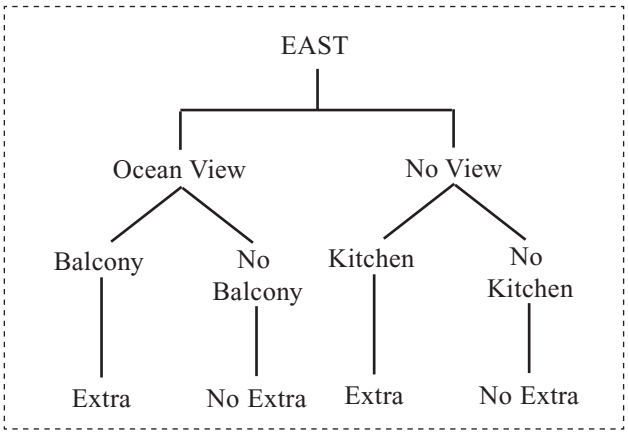
Exercise 4

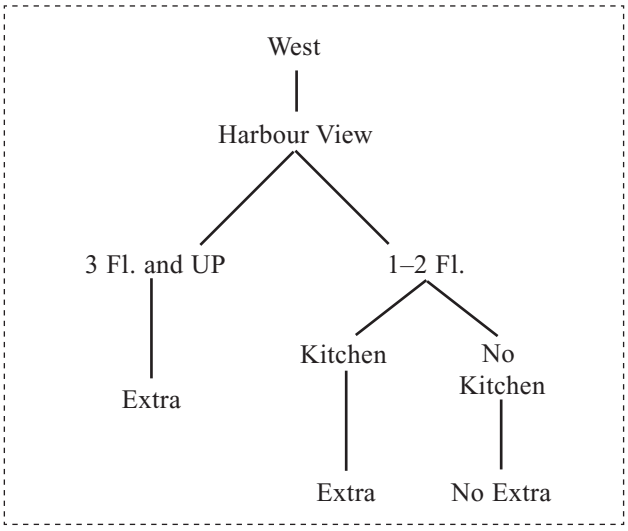
1. (c)	**2.** (b)	**3.** (d)	**4.** (b)	**5.** (c)	**6.** (c)	**7.** (b)	**8.** (a)	**9.** (a)	**10.** (a)
11. (a)	**12.** (a)	**13.** (d)	**14.** (c)	**15.** (b)	**16.** (a)	**17.** (c)	**18.** (b)	**19.** (a)	**20.** (b)
21. (b)	**22.** (d)	**23.** (c)	**24.** (c)	**25.** (c)					

EXERCISE 1

Solutions to Q.1 to 4:

Let us have a schematic presentation of the given conditions:





1. Simply read the information from the diagram. Some rooms described in options (a) and (c) have kitchen facilities; the rooms described in option (b) all involve an extra charge. Therefore only option (d) will not have an extra charge.

Hence, option (d) is the correct answer.

2. The only extra charges are for an ocean view with a balcony, a harbor view, The third floor and up and the rooms with kitchen facilities, no matter where. But some ocean view rooms without a balcony and some no-view, no-kitchen East wing rooms may be above the third floor Therefore options (a), (b) and (d) are all false.

Hence, option (b) is the correct answer.

3. The statement of option (c) directly contradicts the first extra-charge condition. The other choices are all definitely true.

Hence, option (c) is the correct answer.

4. We don't know whether any West wing rooms above the second floor or with kitchen facilities have balconies (I). But we do know that the East wing rooms without a view or a kitchen have no extra charge attached (II) and that all kitchen facilities are in rooms not otherwise subject to an extra charge (III). Therefore statement (I) is the correct answer.

Hence, option (a) is the correct answer.

Solutions to Q.5 and 6:

5. Given $B < A < C$, $E < B < D < G < F$
$B < F < A$
$H < B$

From this information,

$H < B < F < A < C$ ... (1)
$(< Q, Z)$ $(A < P)$

and $E < B < D < G < F$ ... (2)

A is false from (2), B from (1), C from (1 and 2)
D "may be " true

Hence, option (d) is the correct answer.

6. N(p) cannot be termed as greatest as its equation with N(c) is not given.

And also as N(p) is super set of N(A) so, there are 4 numbers greater than N(G), i.e., N(c), N(p), N(A) and N(F).

Hence, option (a) is the correct answer.

Solutions to Q.7 to 13:

7. Reports by G followed by D cannot be in appropriate order because both are first assistants. According to the conditions given in the question, each of the first assistants delivered their report exactly after his or her captain.

Hence, option (d) is the correct answer.

8. The order of delivery of the reports would be: M GNDOAL or MDNGOAL

There are two more cases in the solution

MGNLAOD or MDNNLAOG

Hence, option (d) is the correct answer.

9. If the second speaker was a captain, he must be N and the first speaker was M because the first captain to speak was M and captain N spoke after him. In this case the seventh speaker was a first assistant because

each of the first assistants delivered their report exactly after his or her captain.

Hence, option (a) is the correct answer.

10. The order of delivery of the reports would be:

MNGLAOD or MNDLAOG or

MGNLAOD or MDNNLAOG

Hence, option (c) is the correct answer.

11. The 1st person to deliver speech is M who is a captain and he must be immediately followed by G and the 3rd person must be N. So, 1st 3 persons are MGN. The last person to deliver speech is a captain, so 4th person must be a first assistant, 5th person be a captain and 6th person must be a first assistant and last person is a captain.

So, 1st person = M, 2nd person = G, 3rd person = N, 4th person = A/D, 5th person = L/O, 6th person = A/D and 7th person = L/O.

So, there are 4 possible cases—MGNALDO, MGNAODL, MGNDLAO and MGNDOAL

Hence, option (b) is the correct answer.

12. L is the captain whose 1st assistant is absent. So, the 1st assistants of M and N are present. So, the 2nd person to present the report must be the first assistant of M, i.e., D/G (as A is 3rd first assistant to present the speech). The 3rd person is N and 4th person is D/G (first assistant of N and he cannot be A).

So, 1st person = M, 2nd person = D/G, 3rd person = N, 4th person = D/G.

The 5th person must be a captain so he is either O or L.

If 5th person is O, then 6th person is A and last person is L.

If 5th person is L, then 6th person is O and last person is A.

So, the possible cases are—MDNGOAL, MDNGLOA, MGNDOAL and MGNDLOA

The statement in option (b) is true in all of these possible scenarios.

Hence, option (b) is the correct answer.

13. The order MDNGLOA is possible if

1. D is the 1st assistant of M
2. G is the 1st assistant of N
3. L is the captain whose 1st assistant is missing and he presents his speech before O and so also before A who must be the 1st assistant of O

The conditions given in option (b) directly states the 1st and 2nd conditions and indirectly it also covers the 3rd condition shown above.

Hence, option (b) is the correct answer.

Solutions to Q.14 to 17:

14. Mr Donald required silence in the offices next to his Mr Mike and Mr Brown need to consult each other while working. So, Mr Donald should occupy the office farthest from Mr Brown.

Hence, option (d) is the correct answer.

15. Ms Hardy has to be allotted the office number 5 and she is allergic to tobacco smoke, so the offices next to her are to be occupied by non-smokers. Hence, smokers should be seated in the offices 1, 2 and 3.

Hence, option (d) is the correct answer.

16. Mr Mike and Mr Brown need adjacent offices. So, Mr Mike cannot be seated in the office numbers 1 and 6. Ms. Hardy is in office number S & offices next to her i.e. 2 & 4 must be occupied by non-smokers. So, Mr. Mike being a smoker cannot have office no. 2 or 4. The only possible office number for him is office number 3.

Hence, option (d) is the correct answer.

17. There will be no request for change of office for options (a), (c) & (d). But if Ms. Hardy installs a noisy machine than Ms. Robert may have problem in using telephone as she is next to her. Also, Mr. Brown who is also next to Ms. Hardy may have problem with Mr. Mike.

Hence, option (b) is the correct answer.

Solutions to Q.18 to 23:

18. If two individuals serve on committee B then three individuals should serve on committee A, because committee A should consist of exactly one member more than committee B. Hence, four individuals should serve on committee C.

Hence, option (b) is the correct answer.

19. The minimum number of individuals on committee A and B could be 2 and 1 respectively. Hence, the largest number that can serve together on committee C is 6.

Hence, option (d) is the correct answer.

20. In case R is the only individual serving on committee B then T and S should serve on committee A, because they don't serve on committee C.

Hence, option (d) is the correct answer.

22. If three individuals are serving on committee B, four individuals should serve on committee A. So, the total number of members of committee C should be two. Z and Y don't serve on committee A. Hence, they work on committee C.

Hence, option (a) is the correct answer.

23. Committee C can't have three members. So, option (c) and option (d) cannot be the answers. Again T doesn't serve on committee C. So option (a) is also ruled out.

Hence, option (b) is the correct answer.

24. If video of Yannie is played at slot D, then both the advt. must be aired in slot A & H. Now, 2 of consecutive videos of Jennifer Lopez must be in B & C, else

there will be more than 2 videos consecutively. Now, video of Ricky Martin must be in slot F.

A	B	C	D	E	F	G	H
Advt.	J Lo.	J Lo.	Yannie	J Lo.	R.M.	J. Lo.	Advt.

Hence, option (b) is the correct answer.

Exercise 2

Solutions to Q.1 to 4:

1. If A is on the team, Y and B cannot be selected. Hence, other members are X, Z and D because Z and C cannot be selected together.

Hence, option (b) is the correct answer.

2. Y and C can be selected along with X and B or D. Z and B can be selected along with X or Y and D.

Z and D can be selected along with X and Y and A or B.

Hence, option (d) is the correct answer.

3. If Y and Z are selected, A and C cannot be selected. Hence, two junior members are B and D only.

Hence, option (d) is the correct answer.

4. The III condition given in the question cannot be verified as X can/cannot be selected with a team forming with B, D and two senior members.

For example,

YZBD

XYBD

Both are valid terms.

Hence, option (b) is the correct answer.

Solutions to Q.5 to 9:

We know that Kedarnath got either burfi or rasgulla. So, Kedarnath- Burfi/rasgulla

Neither Joginder nor Girish got Kaala-jamun, Trilochan and Kedarnath too did not got Kaala-Jamun. So, we can conclude that Rameshwar got Kaala-Jamun

Let us mark it: Rameshwar- kaala-jamun

Trilochan did not receive Laddu or Kaala-jamun. So, he received-Burfi/Rasgulla/Halwa

So, information we have so far is as-

1. Rameshwar – Kaala-Jamun
2. Kedarnath – Burfi/Rasgulla
3. Trilochan – Burfi/Rasgulla/Halwa
4. Jogindar – Burfi/Rasgulla/Halwa/Laddu
5. Girish – Burfi/Rasgulla/Halwa/Laddu

Thus, Rameshwar received Kaala-Jamun

Hence, option (d) is the correct answer.

6. If Kedarnath received Rasgulla, then the distribution of sweets can be readjusted as-

1. Rameshwar – Kaala-Jamun
2. Kedarnath – Rasgulla
3. Trilochan – Burfi/Halwa
4. Jogindar – Burfi/Halwa/Laddu
5. Girish – Burfi/Halwa/Laddu

We can see that:

1. If Joginder received Burfi, Trilochan received Halwa and Girish received Laddu.
2. If Joginder received halwa, Trilochan received Burfi and Girish received Laddu.

Hence, option (c) is the correct answer.

7. If Trilochan received halwa, the distribution of sweets can be modified as-

1. Rameshwar – Kaala-Jamun
2. Kedarnath – Burfi/Rasgulla
3. Trilochan – Halwa
4. Jogindar – Burfi/Rasgulla/Laddu
5. Girish – Burfi/Rasgulla/Laddu

Hence, option (d) is the correct answer.

8. If Kedarnath received Burfi, the distribution of sweets can be modified as-

1. Rameshwar – Kaala-Jamun
2. Kedarnath – Burfi
3. Trilochan – Rasgulla/Halwa
4. Jogindar – Rasgulla/Halwa/Laddu
5. Girish – Rasgulla/Halwa/Laddu

If Joginder received Rasgulla, Trilochan received Halwa and Girish received Laddu.

Hence, option (c) is the correct answer.

8. If Kedarnath received Burfi, the distribution of sweets can be modified as-

1. Rameshwar – Kaala-Jamun
2. Kedarnath – Burfi
3. Trilochan – Rasgulla/Halwa
4. Jogindar – Rasgulla/Halwa/Laddu
5. Girish – Rasgulla/Halwa/Laddu

If Joginder received Rasgulla, Trilochan received Halwa and Girish received Laddu.

Hence, option (c) is the correct answer.

9. If Girish received Burfi, the distribution of sweets can be modified as-

1. Rameshwar – Kaala-Jamun
2. Kedarnath – Rasgulla

25. If C is not selected, then A & B must be selected. As B & H cannot be selected together, so H could not be in the committee.

Hence, option (b) is the correct answer.

3. Trilochan – Halwa
4. Jogindar – Laddu
5. Girish – Burfi

Hence, option (d) is the correct answer.

Solutions to Q.10 to 12:

Shiva spent 14 days in 6 cities with at least 2 days in each city. So, he could either spend 2 days in 5 cities & 4 days in 6th city or he can spend 2 days in 4 cities & 3 days in 2 cities.

10. Shiva must visit at least 3 cities of Gujrat in 8 days.

Hence, option (c) is the correct answer.

11. Shiva must have spend 4 days in Ahmedabad & 2 days in other 5 cities. Clearly option (c) is incorrect. It is possible for him to spend 4, 2 & 8 days in Gujrat, U.P. & Maharastra. So, option (d) is also incorrect. He can also spend 2 days each in Maharastra & U.P. & all remaining days in Gujrat. So, option (a) is also incorrect.

Hence, option (b) is the correct answer.

12. He must have visited 1 city of U.P. & 3 cities of Maharastra with 3, 2 & 2 days in those cities. So, option (d) must be false.

Hence, option (d) is the correct answer.

Solutions to Q.13 to 17:

13. We get the following table: A-H-E; B-H-C; C-H-M; D-E-H; E-P-M; F-M-P. Now all the questions can be answered.

Hence, option (a) is the correct answer.

14. The female member is the person who teaches English.

Hence, option (d) is the correct answer.

15. None of the teachers have the same compulsory and optional subjects.

Hence, option (d) is the correct answer.

16. E and F have Physics and Mathematics.

Hence, option (c) is the correct answer.

17. A, B and C have History as compulsory subject, from the above table.

Hence, option (d) is the correct answer.

18. The books on plays are the fifth and sixth, also the other two books on plays are between the two books on composition, Hence, the book on composition is fourth from the top.

Hence, option (c) is the correct answer.

Solutions to Q.19 to 21:

19. If Phaneesh is assigned to sector Dwitiya, then Naghbhushanam must be assigned to sector Pratham & Ramaswamy must be assigned to sector Tritiya. Now, the 2nd member assigned to Tritiya must be Swaminathan as Tirthankar & Visheshwar, both have completed the training programme like Ramaswamy. So, only Swaminathan can be the other person in Tririya

Hence, option (b) is the correct answer.

20. If Phaneesh is assigned to sector Prathama, then Naghbhushanam must be assigned to sector Dwitiya & Ramaswamy must be assigned to sector Tritiya. Now, the 2nd member assigned to Tritiya cannot be Visheshwar, as both have completed the training programme & we need just 1 such person. So, option (a) is not acceptable arrangement. Rest options are acceptable.

Hence, option (a) is the correct answer.

21. If Tirthankar is assigned to sector Tritiya, then Ramaswamy must be assigned to sector Pratham or Dwitiya as both of them cannot be assigned to same sector. Now, Naghbhushanam must be assigned to sector Pratham or Dwitiya as it is given condition. Now the partner with Naghbhushanam cannot be Tirthankar as both must be assigned to different sectors. Also, both Naghbhushanam & Ramaswamy cannot be kept in same sector. So, the partner with Naghbhushanam must be Visheshwar. So, option (d) must be true

Hence, option (d) is the correct answer.

Solutions to Q.22 to 25:

For simplicity, let us denote each yogic exercise (Asanas) by 1st letter only

22. If C is in routine, then U must be 1 of the exercises done after it. In option (a), we have C but not U. So, option (a) could not be the next day's routine

Hence, option (a) is the correct answer.

23. If C is the 4th exercise for any schedule, then 5th exercise must be U (condition iii). But, the last (i.e. 5th) exercise for any schedule can be D or T (condition iv). So, option (c) cannot be true for any permissible schedule

Hence, option (c) is the correct answer.

24. We have chosen C & V for the schedule of 1st day. As U must follow C, so 1of the other 3 exercises must be U. As the 5th exercise for any schedule can be D or T. So, we must have either D or T as 1 of the 3 other exercises. From given options, only (b) have U & D (from D & T). Rest options are not feasible.

Hence, option (b) is the correct answer.

25. We know that U must follow C in any schedule. So, if C is 3rd exercise, U must be either 4th or 5th. But, the 5th exercise can be D or T. So, if C is 3rd exercise, U must be the 4th & D or T is the 5th exercise. But, S must follow B in any schedule. So, if B is 2nd exercise then we have no position after 2nd (i.e. 3rd or 4th or 5th) for S. So, B cannot be the 2nd exercise.

Hence, option (a) is the correct answer.

Exercise 3

Solutions to Q.1 to 5:

1. Note that all other choices violate some condition or the other. Only in option (d), we get

J	K	L	M	N	P	Q
1	3	3	3	2	3	1

Hence, all the conditions are fulfilled.

Hence, option (d) is the correct answer.

2. If L teaches during the first term, M also teaches during the first term, which means that four teachers should teach during the third term. But in the given conditions this in not possible.

Hence, option (a) is the correct answer.

3. If M = 3, L is also 3, there are two teachers for the first term and four for the third term.

Hence, option (c) is the correct answer.

4. KPQ can be two only, which leaves J and N same, which is not possible.

Hence, option (d) is the correct answer.

5. The only possibility is that 1, 4 & 2 intructors must be teaching in 1st, 2nd & 3rd term respectively. K teaches in 3rd term. L & M must teach in same term & they cannot teach in 1st or 3rd term as it will result in more number of teachers than required. So, both L & M must teach in 2nd term. So, (b) is correct option.

Hence, option (b) is the correct answer.

Solutions to Q.6 to 10:

6. Note that all the choices violate some condition or the other, except (a).

Hence, option (a) is the correct answer.

7. If K = 5, L = 1/3, P = 4 and S = 6. Hence, B = 7.

Hence, option (c) is the correct answer.

8. If S = 5, H = 2, P has to be 4 and K = 6. Hence, all positions can be determined.

Hence, option (b) is the correct answer.

9. If K = 6, H = 2, then Pmust be 5 as there is no position left for it. Hence, R cannot be 5.

Hence, option (a) is the correct answer.

10. If S = 7, H = 2, B = 3, then all conditions can be determined.

Hence, option (d) is the correct answer.

Solutions to Q.11 to 16:

11. Note that all conditions except the first, violate some condition or the other.

Hence, option (a) is the correct answer.

12. If V = Tuesday, then K must come twice and S cannot be interviewed since S, U and R come together and there is no place for all three.

Hence, option (d) is the correct answer.

13. If K is not interviewed, then V is also not interviewed. Hence, T gets interviewed on Monday and Friday.

Hence, option (c) is the correct answer.

14. If S is interviewed, then U and R must be interviewed and in the balance days V, K and K must be interviewed. Note that all other choices violate some conditions of the other.

Hence, option (a) is the correct answer.

15. If U and T are not interviewed, S is also not interviewed. So R is interviewed twice and K cannot be interviewed on Wednesday.

Hence, option (d) is the correct answer.

16. We get SURVKK; Hence, K can be interviewed on Monday, Wednesday or Friday.

Hence, option (c) is the correct answer.

Solutions to Q.17 to 21:

17. Package 2 is packed in a carton, so KB is not in 2. If package 1 is in tin, KB is only in 3 or 4 and they cannot be adjacent.

Hence, option (a) is the correct answer.

18. If package 4 contains R, it is in a carton, packages 3 and 1 contain KB and are in bucket. All conditions are fulfilled.

Hence, option (c) is the correct answer.

19. If R is in the maximum number of packages, then K is in package 1 and 3.

Hence, option (a) is the correct answer.

20. If package 4 contains P and C, then KB is in package 1 and 3, package 2 and 5 contain R, hence package 1 must contain SH.

Hence, option (a) is the correct answer.

21. If package 3 is in a tin, it contains P or G/J as well.

Hence, option (c) is the correct answer.

Solutions to Q.22 to 25:

22. If B = 6, then P = 4 or 5. Since C < V, then C cannot occupy 4 or 5, hence C cannot be in the top three positions.

Hence, option (a) is the correct answer.

23. Since 5 is closed, P = 4. Then B must have one horse separating them, hence he must be at 6.

Hence, option (c) is the correct answer.

24. We can have C = 1, then P = 4 and B = 6. In this case, both A = 7.

Hence, option (a) is the correct answer.

25. If C=5, A has to be at 1.

Hence, option (b) is the correct answer.

Exercise 4

Solutions to Q.1 to 3:

1. The positions are: Gupta(1–4), vacant = 5, Maurya (6–7) vacant = 8, Indus (9–11), vacant = 12. Therefore the unused table spares are 5,8 and 12.

Hence, option (c) is the correct answer.

2. Y cannot be on table 9 as there would be no place to fix three objects.

Hence, option (b) is the correct answer.

3. QZX have to be together. They can start from table 1 or 2.

Hence, option (d) is the correct answer.

Solutions to Q.4 to 6:

4. Y must be published in August, otherwise there would be no place for W. Y & Z cannot be published together. So, only possible option is (b).

Hence, option (b) is the correct answer.

5. Same as the last question.

Hence, option (c) is the correct answer.

6. Since U, V and W cannot be repeated and Y must be in the selection.

Hence, option (c) is the correct answer.

Solutions to Q.7 to 9:

7. R cannot be later than S. Therefore only option (b) satisfies this condition.

Hence, option (b) is the correct answer.

8. The order for entry is: RMTS. Then the order for leaving can only be MRST.

Hence, option (a) is the correct answer.

9. The order for entry is MRTS. For leaving, S cannot be the fourth so she must be the second or the third. In that case, R must be the first.

Hence, option (a) is the correct answer.

Solutions to Q.10 to 13:

The total amount spent by the different families was in integers. The average amount spent by the members of the Apang family was 3.25. So the number of members of this family should be either 4 or a multiple of 4, to make the total amount spent by the family an integer. Similarly, the number of members of the Gagan family should be either 8 or a multiple of 8. The table below shows the probable number of family members:

Table

Family	Average expenditure of family members	Probable number of members	Exact members	Amount spent by the whole family
Apang	$3.25 = 3 + \frac{1}{4}$	4,8,12,16,20,24,…	12	39
Gagan	$2.125 = 2 + \frac{1}{8}$	8,16,24,32,…	24	51
Kumar	$3.166 = 3 + \frac{1}{6}$	6,12,18,24,…	36	114
Lapa	$3.1428 = 3 + \frac{1}{7}$	7,14,21,28,…	14	44
Zora	$4.5 = 4 + \frac{1}{2}$	2,4,6,8,10,12,14…	14	63
Rio	$2.111 = 2 + \frac{1}{9}$	9,18,27,36, …	36	76
Chaman	$5.20 = 5 + \frac{1}{5}$	5,10,15,20,25, …	20	104
Sarkar	$4.33 = 4 + \frac{1}{3}$	3,6,9,12,15,18, …	24	104
		Total	**180**	**595**

10. From the above table, it can be determined that the sum of the amount spent by both the families = 44 + 63 = 107.

Hence, option (a) is the correct answer.

11. From the table we can see that the correct answer is option (a).

Hence, option (a) is the correct answer.

12. One sixth of the total members of the Apang, Gagan and Kumar families = (1/6)(12 + 24 + 36) =12.

So, the number of children = 72 – 12 = 60.

Hence, option (a) is the correct answer.

13. Hence, option (d) is the correct answer.

Solutions to Q.14 to 17:

Using (i)—If B is R, then D is S. However, we cannot conclude that if D is S, then B is R. If B is R, then D is S [from (i)). Let us assume that B is R, then D is S. From (iii), as D is not T, E is S. But Both D and E cannot be S. So, our assumption (namely B is R) itself is not valid. Hence we can conclude that B is not R.

Using (ii), (iv), and (v)—If B is S, then A is Q [from (iv)]. In such case, C is S [from (iii)). Once again it is not acceptable, as B and C both cannot be S. Hence the assumption made is invalid in this case too (that B is S). So, B is not S. If B is P, then A is Q [from (iv)]. In that case, C is S [from (ii)]. As C is not T, B is not P [from (iv)]. This contradicts the assumption that (B is P) with which we started off. So this is also invalid. Hence, B is not P.

As B is neither S nor P, we also get from (iv) that A is not Q. Looking at (iii) again we get from this that D is not S. (If D is S, D is not T and hence E is S. This is not possible, as both D and E cannot be S.)

Let us summarize the findings till now:

A	B	C	D	E
Not Q	Not R	Not S	Not S	Not P

Hence, B can only be Q or T. Now, if B is Q, D is R and E is not S [from 4].

But if D is R, E must be S, according to (iii). We cannot have a situation where one given statement is contradicted by another given statement. Hence, B cannot be Q. So, the only possibility is that B is T. So we are sure now that B is T.

Looking at (vi) again, D is R and E is not S, if and only if B is Q. Now, as B is not Q, it follows that D is not R. It also follows that E is S. If A is R, then C is T (vii) But we know that B is T, so C is not T. It follows that A is not R. Thus, A is not R, A is not Q, A is not T (as B is T), and A is not S (as E is S). Hence A is P.

Coming to D, D is not P or S or T (as A is P, E is S and B is T). We have also seen above that D is not R. Hence, D is Q.

The person left out till now, namely C, has to be R in that case. So, A, B, C, D and E operate under the names of P, T, R, Q and S respectively.

Solutions to Q.18 to 19:

A couldn't be the 1st or 2nd, for he would be telling the truth; or the 5th, for he would be lying; so he was 3rd or 4th.

If D was telling the truth, then E would be lying. Thus D would be the 1st, and lying at the same line which is contradictory. Thus, D is lying, and he is the 1st or 2nd.

If E was lying, D would be the 1st, so E would have to be the 2nd, then D would have been telling the truth. Thus, E is the 3rd, 4th or 5th and D must be 2nd.

Now, only B or C could be the 1st. If B isn't the 1st, as he couldn't be the 2nd, he would have to be the 4th or 5th because C would be the 3rd, But nobody would be the 1st; the only solution then is B, D, E, A and C.

Solutions to Q.20 to 22:

20. We must assign 1st project to M as we need least time for 1st project. Similarly 4th project is given to R. Similarly 2nd, 3rd & 5th projects are given to C, S & L respectively. The time required is 2 hours.

Hence, option (b) is the correct answer.

21. The cumulative time (using answer 20) is 1.5 + 2 + 1.5 + 1.5 + 2 = 8.5 hour. (The projects are alotted as were alotted in answer 20).

Hence, option (b) is the correct answer.

22. As each person is doing exactly 1 project, so the maximum time for the assignment is the maximum time by any person for any project. As, maximum required by any person for any project is shows.

Hence, option (d) is the correct answer.

Solutions to Q.23 to 25:

Let us represent number of oranges, bananas & mangoes as O, B & M. We are given,

$$O + B + M = 42 \quad (1)$$

$$B < \frac{1}{2} O \quad (2)$$

$$M > \frac{1}{3} O \quad (3)$$

$$M < \frac{3}{4} B \quad (4)$$

So, from (4) B must be a multiple of 4 or near to it. So, by (2) O must be a multiple of 8 or near to it. Similarly by (3) O is a multiple or 3 or near to it. So, O must be a multiple of 24 or near to H. So, let O = 24, then B < 12 & M > 8 & < 9 (near about). To make M a possible number, we can make adjustments as O = 23; B = 11 & so, M = 8.