STUDENT COPY

IBA

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ANALYTICAL LECTURE - 1

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The review section is very elaborately presented for the students. It will give a detailed picture of the analytical ability problems and equip them with techniques and cracking tools. Try to read the whole lecture carefully. It is also advisable that you READ MORE THAN ONCE. This will help you hone up your sensitivity of judgment. Know that the Analytical Ability problems are designed for the Graduate level Students. You may find it a little difficult initially.

PUZZLES

Each analytical section of IBA admission test will contain some "Analytical Reasoning" sets or puzzles accompanied by three to six questions. These puzzles can be boiled down to a simple step-by-step procedure. Improving your score on them will require practice. Our techniques should help you considerably, but you'll still need to work on puzzles a little each day.

Try to practice puzzles concentrating on using the step-by-step method, but have fun with puzzles. Think of them as brainteasers as challenges to your ingenuity.

The Step-by-step Strategy

In this section you will be provided with the basic outline to solve these puzzles. You will need to practice one or two problems to understand these steps elaborately. Ask your teacher for help.

STEP 1: Read the whole setup and all the clues.

STEP 2: Draw a model diagram that shows the structure of the puzzle

STEP 3: Symbolize the clues in a way that's consistent with your diagram for the puzzle.

STEP 4: Double-check your diagram and symbols.

STEP 5: Size up the clues and draw deductions.

STEP 6: Attack the questions.

STEP 7: Keep your pencil moving.

Some Symbolizing Guidelines

The symbolizing guidelines will work as your "tips" to approach the puzzles. These are very general guidelines and your own idea of thinking up different problems may differ from these. Don't take these as standards; always try to come up with new ideas to help yourself.

- Make separate symbols for each element: for example, WWWW, not 4W. Try to use initials instead of full names.
- When two elements are always next to each other, put a BLOCK ☐ around them. Blocks make puzzles much easier.
- When two elements can never be next to each other, use an ANTIBLOCK ⧄ symbol.
- For conditional clues (If ... then...) use an ARROW (→). The element that depends on something goes on the right. The independent element goes on the left side of the arrow. Always remember the Cause and Effect relationship diagrams. Ask your instructor for a detailed analysis of this issue.
- Try to form secondary conditions from one or more primary conditions which are explicitly mentioned in the puzzle.

- In some cases it's just not possible to symbolize a clue. Be sure to write some shorthand summary of the clue, or circle it with your pencil, so that you don't forget to check that clue as you do to each question.

- The more time you spend analyzing the conditions of the puzzle, the easier the questions will seem. So, take sufficient time to crack the conditions, to form secondary conditions, and to draw a proper diagram of the puzzle.

MATH TRICKS:

Certain questions in the IBA Admission test might contain Math Tricks or IQ Tests. These questions are very easy to answer and should not take much time. The objective of giving these questions is to test your IQ.

Example:

If 3! means 3×2×1 and 4! means 4×3×2×1 then what does $\frac{6!}{7!}$ mean?

While answering this question, you don't need to think much or calculate anything. 7! will stand as 7×6×5×4×3×2×1 & 6! is 6×5×4×3×2×1. Therefore, only an extra 7 would be left as the denominator of $\frac{6!}{7!}$. The answer will be $\frac{1}{7}$.

Don't waste much time answering these questions. Keep in mind that these questions do not test your math skill. Your prompt reaction after seeing the questions will save your time during the Exam.

PUZZLES FOR PRACTICE:

Question 1 – 4

A shopkeeper is preparing gift boxes of candy. Each box will contain exactly two kinds of hard candy to be selected from F, G, and H, and exactly three kinds of soft candy to be selected from P, Q, R, S, and T, with the following restrictions.

G cannot be in the same gift box as T.
P cannot be in the same gift box as S.
Q cannot be in the same gift box as T.

1. If G is included in a gift box, which of the following is a kind of candy that must also be included?

   A. F B. H C. P D. Q E. S

2. If H is not included in a particular gift box, any of the following kinds of candies can be included except

   A. P B. Q C. R D. S E. T

3. Which of the following kinds of candies must be included in each of the boxes?
   A. F B. G C. H D. P E. R

4. If T is included in a gift box, the box must also include which of the following kinds of candy?
   A. F and G B. F and H C. G and H D. P and R E. R and S

5. In a gift box that contains acceptable assortment of candies, which of the following substitutions will always result in another acceptable assortment?
A. P for S B. Q for R C. S for R D. T for P E. T for Q

Question 6 – 9

Three university students – an American, a Bangladeshi and a Chinese – win the top three prizes in an international computer programming contest. Their universities are Georgetown, Harvard, and IBA, not necessarily in that order. The students' names are John, Zafar and Mark, not necessarily in that order.

The Georgetown student wins neither the first nor the second prize.

The Chinese wins the first prize.

Mark wins the second prize.

The American is Zafar.

Mark studies in Harvard.

6. Zafar
A. doesn't study at IBA B. is the Bangladeshi C. is not the American
D. studies at Harvard E. wins the second prize

7. The Harvard student
A. is not Mark B. wins the first prize C. is Zafar
D. is the Chinese E. is the Bangladeshi

8. The first prize is won by
A. Zafar B. Mark C. The Harvard student
D. The IBA student E. The Bangladeshi

9. Which statement correctly lists the students in the order of prizes won (i.e. 1st, 2nd, 3rd)?
i. The Harvard student; the Chinese; John
ii. John; the Bangladeshi; the Georgetown student
iii. The IBA student; Mark; the American
A. I and II B. II and III C. I only D. II only E. III only

Question 10 – 13

The supervisor of a commuter airline is scheduling pilots to fly the round trip from City X to City Y. The trip takes only two hours, and the airline has one round-trip flight in the morning and one round-trip flight in the afternoon, each day, Monday through Friday. Pilots must be scheduled in accordance with the following rules:

Only W, *X,* and Y can fly the morning flight.

Only V, X, and Z can fly the afternoon flight.

No pilot may fly twice on the same day.

No pilot may fly on two consecutive days.

X must fly the Wednesday morning flight.

Z must fly the Tuesday afternoon flight.

10. Which of the following must be true?

A. W flies the Monday morning flight. B. X flies the Monday afternoon flight.

C. Y flies the Tuesday morning flight D. W flies the Thursday morning flight.

E. Z flies the Thursday afternoon flight.

11. If X flies on Friday morning, which of the following must be true?

A. X does not fly on Monday afternoon.
B. V flies on Friday afternoon.
C. W flies on Thursday morning.
D. Y flies on Thursday morning.
E. Neither W nor Y flies on Thursday morning.

12. If X flies only one morning flight during the week, which of the following must be true?

A. W flies exactly two days during the week.
B. Y flies only one day during the week
C. X flies exactly three days during the week.
D. X flies more times during the week than V.
E. Z flies Monday afternoon and Friday afternoon.

13. If W is not scheduled to fly at all during the week, all of the following must be true EXCEPT:

A. X flies on Monday morning
B. V flies on Monday afternoon.
C. Y flies on Thursday morning
D. Z flies on Friday afternoon.
E. X flies on Friday morning.

Questions 14-17

Every night at M Café, Mursalin, the manager, chooses five items to be offered for dinner from a list of seven items – beef, rice, bread, fish, vegetable, chicken and duck. In making his decision each night. Mursalin always adheres to the following conditions:

- Either rice of bread is offered every night but not both.
- Whenever there is fish, there is also vegetable.
- Bread is never offered on a night when beef is offered.

14. One night when Mursalin offers beef, which of the followings must also be offered?
(A) rice (B) Bread (C) fish (D) vegetable (E) duck

15. Which of the followings could be a list of the five dishes offered for one night?
(A) Beef, rice, vegetable, bread, fish (B)Beef, fish, vegetable, chicken, duck
(C) Beef, rice, fish, chicken, duck (D) Beef, bread, fish, vegetable, duck
(E) Beef, rice, fish, vegetable, chicken

16. If rice is not in the menu one night, which of the other dishes will also not be included in the menu?
(A) Beef (B) bread (C) vegetable (D) chicken (E) duck

17. One night, Mursalin decides to offer only four dishes, one of which is beef. In how many ways can he make up the list of dishes offered?
(A) 2 (B) 3 (C) 4 (D) 5 (E) 6

Questions 18-22

In order to gain full course credit for him tour of a foreign city, Raiad must visit exactly seven famous places of interest—a foreign office, a river, the hill, a library, a mosque, a club, and a theater. He must plan his tour to conform with the following conditions:

- The foreign office must be one of the first three places visited.
- The hill must be visited immediately before the river.
- The library can be neither the first nor the last place visited.
- The mosque must be either the first or the last place visited.
- The club must be one of the last three places visited.

18. Which of the following is an acceptable order in which Raiad may tour all seven places of interest?
    (A) Foreign office, theater, hill, library, club, river, and mosque
    (B) Hill, river, foreign office, library, theater, club, and mosque
    (C) Library, theater, foreign office, hill, river, mosque, and club
    (D) Mosque, foreign office, club, hill, library, river, and theater
    (E) Mosque, library, hill, river, foreign office, club, and theater

19. If Raiad visits the theater, the library, and the foreign office, one directly after the other in the order given, at what position he must visit the river?
    (A) second (B) third (C) fourth (D) fifth (E) sixth

20. If, Raiad begins his tour at the hill, which of the following could be the fourth place of interest he visits on the tour?
    (A) The foreign office (B) The river (C) The library (D) The mosque (E) The club

21. If Raiad is to visit the club sixth, he could visit the hill in any of the following positions on his tour EXCEPT
    (A) first (B) second (C) third (D) fourth (E) fifth

22. If Raiad visits exactly one place of interest between him visits to the foreign office and the club, that place must be either the
    (A) river or the hill (B) river or the theater (C) hill or the mosque
    (D) library or the mosque (E) library or the theater

MIXED PROBLEMS

23. Neelim is taller than Tarique. Rabib is taller than Muib. Muib is shorter than Abrar. Tarique and Abrar are of the same height.
    If the above is true, which of the following statements must also be true?

    A. Rabib is taller than Abrar
    B. Rabib is taller than Neelim
    C. Tarique is taller than Rabib
    D. Neelim is shorter than Muib
    E. Tarique is taller than Muib

24. If $x > 2$ and $y > -1$, then:
    A. $x < 2y$ B. $-x > 2y$ C. $-x < 2y$ D. $xy > -2$ E. $xy < -2$

25. A rectangle is R inches long and S inches wide. Its length is increased by 4 inches. The area (in sq. inches) has increased by:
    A. 4RS B. 4R C. 4S D. 16RS E. 4(R + S)

26. A, B, C, D, E and F are integers such that the sum of the numbers in the three boxes in any row, column or diagonal is an odd number. The Number D should be:

10	11	A
B	C	D
E	13	F

A. It must be an even number
B. It must be an odd number
C. It must be a multiple of 5
D. It must be a multiple of 3
E. Cannot be determined

27. Which of the following numbers cannot be the last digit of a squared number?

A. 0 B. 1 C. 2 D. 4 E. All

28. A, B, C, D, and E are positioned in a clockwise order around a circular table. E makes a clock wise move jumping over three positions and D makes a counter clock wise move also jumping over three positions after that.
What would be the new positions in clockwise order?

A. B, C, D, A, E
B. E, D, C, A, B
C. A, B, C, E, D
D. None of the above
E. As Before

29. When a meeting of the Sports Committee was over, every member shook hands with one another and the total number of handshakes was 6. How many members were there?

A. 2 B. 3 C. 4 D. 5 E. 6

30. Nabila owes Mariha Tk. 200. Mariha owes Tanmee Tk. 1,000 and Tanmee in turn owes Nabila some money. How much does Tanmee owe Nabila if all three debts could be settled by having Mariha pay Tk. 100 to Nabila and Tk. 700 to Tanmee.

A. Tk. 200 B. Tk. 300 C. Tk. 400 D. Tk. 500 E. Tk. 600