



A collage of various analytical chemistry and data visualization elements. It includes a lightbulb with a brain-like filament, a 3D pie chart, a flowchart with arrows, laboratory glassware like test tubes and flasks, a smartphone, and a computer keyboard. The background features a dark blue gradient with white confetti-like shapes.

EPEA516 ANALYTICAL SKILLS II

Dr. Harish Mittu
Associate Professor

Learning Outcomes



After this lecture, you will be able to

- develop understanding about the basics of sequential order of things,
- analyze different types of sequential order of things,
- solve various problems relating to sequential order of things.

Sequential Order of Things

- Clues/Hints
- Order of Occurrence - Certain Events
- Analyze - Information
- Frame – Correct Sequence

Problem 1

- Five boys took part in a race. Raj finished before Mohit but behind Gaurav. Ashish finished before Sanchit but behind Mohit. Who won the race?

- (a) Raj
 - (b) Gaurav
 - (c) Mohit
 - (d) Ashish
 - (e) Sanchit
 - Gaurav < Raj < Mohit
 - Mohit < Ashish < Sanchit
 - Gaurav < Raj < Mohit < Ashish < Sanchit

Problem 2

- Seven executives P, Q, R, S, T, U, and W reach office in a particular sequence. U reaches immediately before P but does not immediately follow S. R is the last one to reach office. T follows immediately after P and is subsequently followed by W. Among the executives, who reaches the office first?
 - (a) P
 - (b) Q
 - (c) R
 - (d) S
 - (e) U

Problem 2

Problem 3

- Six lectures A, B, C, D, E, and F are to be organized in a span of seven days from Sunday to Saturday, only one lecture on each day in accordance with the following: A should not be organized on Thursday. C should be organized immediately after F. There should be a gap of two days between E and D. One day there will be no lecture (Friday is not that day), just before that day D will be organized. B should be organized on Tuesday and should not be followed by D. On which day there is no lecture?

Problem 3

- A should not be organized on Thursday. C should be organized immediately after F. There should be a gap of two days between E and D. One day there will be no lecture (Friday is not that day), just before that day D will be organized. B should be organized on Tuesday and should not be followed by D. On which day there is no lecture?

Sun	Mon	Tue	Wed	Thur	Fri	Sat
D	X	B	E	F	C	A

Problem 4

- Six plays – A, B, C, D, E, and F are to be staged, one on each day from Monday to Saturday. A must be staged a day before E. C must not be staged on Tuesday. B must be staged on the day following the day on which F is staged. D must be staged on Friday only and should not be immediately preceded by B. E must not be staged on the last day of the schedule. Play D is between which of the following pairs of plays?
 - (a) B and E (b) A and E (c) E and F (d) C and E (e) C and F

Problem 4

- Six plays - A, B, C, D, E, and F are to be staged, one on each day from Monday to Saturday. A must be staged a day before E. C must not be staged on Tuesday. B must be staged on the day following the day on which F is staged. D must be staged on Friday only and should not be immediately preceded by B. E must not be staged on the last day of the schedule. Play D is between which of the following pairs of plays?
- (a) B and E (b) A and E (c) E and C (d) F and E (e) F and C

Mon	Tue	Wed	Thu	Fri	Sat
F	B	A	E	D	C

Problem 5

- Five plays A, B, C, D, and E are to be staged from Monday to Friday of a week. On each day, only one play will be staged. D or E should not be either the first or last to be staged. E should be immediately followed by C. B should be staged immediately after D. One play is staged between A and B. Which of the following is the correct sequence of staging all the plays?
 - (a) A, D, B, C, E
 - (b) A, E, C, D, B
 - (c) B, D, A, E, C
 - (d) D, B, E, C, A

Problem 5

- Five plays A, B, C, D, and E are to be staged from Monday to Friday of a week. On each day, only one play will be staged. D or E should not be either the first or last to be staged. E should be immediately followed by C. B should be staged immediately after D. One play is staged between A and B. Which of the following is the correct sequence of staging all the plays?
- (a) A, D, B, E, C (b) A, E, C, D, B (c) B, D, A, E, C (d) D, B, E, C, A

Mon	Tue	Wed	Thur	Fri
A	D	B	E	C

Problem 6

- A sale representative plans to visit each of the six companies M, N, P, Q, R, and S exactly once during the course of one day. She is setting up her schedule for the day according to the following conditions: She must visit M before N and R. She must visit N before Q. The third company she visits must be P. If the sales representative visits S first, which company must she visit second?
 - (a) M (b) N (c) P (d) Q (e) R

Problem 6

- A sale representative plans to visit each of the six companies M, N, P, Q, R, and S exactly once during the course of one day. She is setting up her schedule for the day according to the following conditions: She must visit M before N and R. She must visit N before Q. The third company she visits must be P. If the sales representative visits S first, which company must she visit second?
 - (a) M
 - (b) N
 - (c) P
 - (d) Q
 - (e) R

S, M , P

M, N, R

N, Q

Problem 7

- A training college has to conduct a refresher course for teachers of seven different subjects – Mechanics, Psychology, Philosophy, Sociology, Economics, Science, and Engineering from 22nd July to 29th July. Course should start with Psychology. 23rd July, being Sunday, should be holiday. Science subject should be on the previous day of the Engineering subject. Course should end with Mechanics subject. Philosophy should be immediately after the holiday. There should be a gap of one day between Economics and Engineering as well as philosophy and Science. Which subject will be on Tuesday?

Problem 7

- A training college has to conduct a refresher course for teachers of seven different subjects - Mechanics, Psychology, Philosophy, Sociology, Economics, Science, and Engineering from 22nd July to 29th July. Course should start with Psychology. 23rd July, being Sunday, should be holiday. Science subject should be on the previous day of the Engineering subject. Course should end with Mechanics subject. Philosophy should be immediately after the holiday. There should be a gap of one day between Economics and Engineering as well as philosophy and Science. Which subject will be on Tuesday?

- 22 23 24 25 26 28 28 29
Psy Sun Philo Eco Sc Eng Soc Mec

Problem 8

- The director of institute has announced that six guest lectures on different areas like leadership, decision making, quality circles, motivation, assessment centre and group discussion are to be organized only one on each day from Monday to Sunday. Motivation should be organized immediately after Assessment Centre. Quality Circle should be organized on Wednesday and should not be followed by Group Discussion. Decision Making should be organized on Friday and there should be a gap of two days between Leadership and Group Discussion. One day there will be no lecture (Sunday is not that day), just before that day Group Discussion will be organized. How many lectures are organized between Motivation and Quality Circle?
 - (a) One
 - (b) Two
 - (c) Three
 - (d) Four

Problem 8

- Monday to Sunday. Motivation should be organized immediately after Assessment Centre. Quality Circle should be organized on Wednesday and should not be followed by Group Discussion. Decision Making should be organized on Friday and there should be a gap of two days between Leadership and Group Discussion. One day there will be no lecture (Sunday is not that day), just before that day Group Discussion will be organized. How many lectures are organized between Motivation and Quality Circle? (a) One (b) Two (c) Three (d) Four

Mon	Tue	Wed	Thu	Fri	Sat	Sun
GD	X	QC	L	DM	AC	M

Problem 9

- Eight doctors P, Q, R, S, T, U, V, and W visit a charitable dispensary every day except on holiday i.e. Monday. Each doctor visits for one hour from Tuesday to Sunday except Saturday. The timings are 9 am to 1 pm and 2 pm to 6 pm; 1 pm to 2 pm is lunch break. On Saturday, it is open only in the morning i.e. 9 am to 1 pm and each doctor visits for only half an hour. No other doctor visits the dispensary before doctor Q and after doctor U. Doctor W comes immediately after lunch break and is followed by R. S comes in the same order as P in the afternoon session. If the lunch break and subsequent visiting hours are reduced by 15 minutes, at what time doctor U is expected to attend the dispensary? (a) 3:15 pm (b) 4 pm (c) 4:15 pm (d) 4:45 pm

Problem 9

- Eight doctors P, Q, R, S, T, U, V, and W visit a charitable dispensary every day except on holiday i.e. Monday. Each doctor visits for one hour from Tuesday to Sunday except Saturday. The timings are 9 am to 1 pm and 2 pm to 6 pm; 1 pm to 2 pm is lunch break. On Saturday, it is open only in the morning i.e. 9 am to 1 pm and each doctor visits for only half an hour. No other doctor visits the dispensary before doctor Q and after doctor U. Doctor W comes immediately after lunch break and is followed by R. S comes in the same order as P in the afternoon session. If the lunch break and subsequent visiting hours are reduced by 15 minutes, at what time doctor U is expected to attend the dispensary?

Q T/V S V/T Lunch W R P U

Problem 9

Q	T/V	S	V/T	Lunch	W	R	P	U
---	-----	---	-----	-------	---	---	---	---

- 1 pm to 2 pm is lunch break. If the lunch break and subsequent visiting hours are reduced by 15 minutes, at what time doctor U is expected to attend the dispensary?

(a) 3:15 pm (b) 4 pm (c) 4:15 pm (d) 4:45 pm

1:45 pm - W 2:30 pm - R 3:15 pm - P 4:00 pm - U

Conclusion

- Sequential Order of Things
 - Order of Occurrence - Certain Events
 - Analyze – Information
 - Frame – Correct Sequence

Summary

- **Puzzle Test**
 - Sequential Order of Things

That's all for now...