1. Michaelis menton eqn and basic enzyme kinetics

2. first order, second order chemical reactions, time versus concentration plots in them, units of kinetics constants in them

3. Logistic equation, terms in it, plots etc

4. basics of lac operon (I did not teach, but you are supposed to know)

5. About tools like DAVID, EnrichR, what they do, their capabilities

6. Fundamantals of Flux balance analysis

7. P-value correction whatever taught

8. solve simple differential equations by theiry as well in R

9. Draw interaction graph for a given set of chmical reactions

10. SIR model, effective reproduction number, about various parameters etc

11. Fundamantal graph theory, degree and all other variable defined in first 3 chapters of Barabasi's book. Small quations will be asked.

12. GO terms, DAVID tool -- what tool can do, what is GO ontology terms etc. What are the functionalities of DAVID tool etc

13. Linearize a set of equations in paper, write Jacobian

14. Perform stability analysis

15. solve SIR model in R

16. Time scales, spacial scales of verious biological systems, categories of models (like continuous, discrete etc) as mentioned in the class.
FDR
17. Solve differential eqn problems in R, as we did in assignments.

18. For a set of interactions, create graph in R (directed and undirected)

19. Given a contingency table, perform Fisher's exact test in calculator.

20. For a list of p-values, apply Benjamini Hochberg FDR in R as taught in the class.

21. perform hierarchical or K-means clustering for the given data.

Keep all the codes taught in the classes ready.

Any other topic taught in the class. Above list is a guidance only.

(see below for details)

Section A and B and 3 questions of section 3 are theory. You will be given 1 hour plus minus some fixed time to finish the exam on regular answer sheet like any theory exam.

Then, answer sheets will be take from you. You switch on computer and do the practical exam.

Instructed to create a single doc file to place all the results, create a pdf document and upload.

I will be available on whatsapp. Raise any doubts to examiners and they will contact me.

Keep it cool and follow instructions. All the best