Key Topics

1. Definition of operational amplifier. **
2. Justification of the word “operational” in op-amp. **
3. Symbolic representation and pin diagram of op-amp. **
4. Characteristics of ideal and practical op amp with appropriate diagram. **
5. Features of op-amp.
6. Internal block diagram of an op-amp.
7. Input signals mode of op-amp. *
8. Definition of CMRR and related math. **
9. Negative feedback circuit. *
10. Why do we use negative feedback circuit? *
11. Inverting amplifier (Output voltage equation, gain equation, math) **.
12. Non-inverting amplifier (Output voltage equation, gain equation, math) **.
13. Input and output impedances equations of non-inverting amplifier (derivation, math**)
14. Summing amplifier, integrator, differentiator (derivation, math**).
15. Difference amplifier (Output voltage equation) **
16. Ideal plot of open loop voltage gain VS frequency. *
17. Math from total open loop gain and phase shift of open loop op-amp. **
18. Closed loop gain compared to open loop gain. (Figure12_42) **.
19. DC characteristics:
    i. Output offset voltage.**
    ii. Input offset voltage.*
    iii. Input offset current.**
    iv. Input bias current. **
    v. Slew rate. **
    vi. Thermal drift.
20. Feedback topologies:
    i. Types of operational amplifiers based on input and output.
    ii. Types of connection of topologies.
    iii. Classification of negative feedback topologies. **

Note:

You must go through all the topics covered in this course. But during revision you may give importance on the star marked topics.

Assalamualaikum.

Fi-Amanillah.