1. Explain the idea behind *preference-based* approach. Give numerical example and explain your findings !
2. What is *rational* consumer behaviour and its implications ? Explain in detail !
3. What is the implications of *completeness* and *transitivity* for *strict* and *indifference* preference relations ?
4. Give at least two examples for violation of *transitivity* assumption. What is this implies in terms of economic application ?
5. Explain the idea, why we are relating managerial analysis to microeconomics?
6. Explain why preference relation is an *ordinal* concept ? Be as precise as possible !
7. What does assumption about *strong monotonicity* mean ? Explain with an example !
8. What does assumption about *convexity* mean ? Explain with an example !
9. Explain *convex* and *concave* functions and their economic applications !
10. What is utility function ? How we relate utility function and preferences ?
11. Can we find a utility function for all preferences ? Give details for your answer !
12. What is *lexicographic* preferences ? Explain with an example !
13. Explain assumption about *continuity* with and example. What is its implication for utility function ?
14. Explain why utility is an *ordinal* concept ? Try to find similarity between preference relation is being an *ordinal* concept either !
15. What is *indifference curve* (IC) ? Interpret its corresponding value !
16. What is marginal rate of substitution (MRS) for Cobb-Douglas utility function ?
17. What is marginal rate of substitution (MRS) for perfect substitutes utility function ?
18. What is marginal rate of substitution (MRS) for perfect complements utility function ?
19. Find the marginal rate of substitution (MRS) for 
20. Define *homothetic* preferences and its application for utility function ?
21. Consider a rational preference relation. Show that if implies and if implies , then is a utility function representing that preference relation .
22. Consider utility function . Find marginal rate of substitution (MRS). Interpret your findings !
23. Consider utility function . Find marginal rate of substitution (MRS). Interpret your findings !
24. Consider utility function . Find marginal rate of substitution (MRS). Interpret your findings !
25. Consider utility function . Find marginal rate of substitution (MRS). Interpret your findings !

**Q1.** Explain the consumer (or demand) side of an economy.

**Q2.** Explain the firm (or supply) side of an economy.

**Q3.** What does marginal rate of substitution between commodities mean? Explain with numerical example.

**Q4.** What is homogeneous function? Which functions you know that is homogeneous in their arguments? Proof your examples.

**Q5.**  find the Walrasian demand function for both commodities. Provide intuition for your results. (Apply utility maximisation problem (UMP))

**Q6.** find the Walrasian demand function for both commodities. Provide intuition for your results. (Apply utility maximisation problem (UMP))

**Q7.** find the Walrasian demand function for both commodities. Provide intuition for your results. (Apply utility maximisation problem (UMP))

**Q8.**  find the Walrasian demand function for both commodities. Provide intuition for your results. (Apply utility maximisation problem (UMP))

**Q9.** Explain how the budget line (budget set) will react to *price* and *income change* , for normal and inferior goods , geometrically and with example. Try to be as precise as possible.

**Q10.** What are Giffen and inferior goods. Provide examples.

**Q11.** find the *indirect utility function*. Provide intuition for your result. (Apply utility maximisation problem (UMP))

**Q12.** Explain the idea for expenditure minimisation problem (EMP). Why we call demand function as compensated demand which solves EMP?

**Q13.** Provide equations that connect utility and indirect utility, expenditure function and budget, Hicksian demand and Walrasian demand functions, and Walrasian demand and Hicksian demand functions. Why they are true?

**Q14.** given this equality apply “Envelope Theorem” and find Roy’s Identity.

**Q15.** this is the *indirect utility* for constant elasticity of substitution (CES) function, where . Find  and  by Roy’s Identity.

**Q16.** is the Cobb-Douglas utility function with . Find the *indirect utility function*. Proof that Walrasian demands for and are the same from UMP and Roy’s Identity.

**Q17.** is the Cobb-Douglas utility function with . Find the *expenditure function, and Hicksian demand functions* for and .

**Q18.** Explain duality of demand and supply side of the economy. What is the economic intuition of Marginal Rate of Technical Substitution (MRTS) and Marginal Rate of Transformation (MRT)?

**Q19.** What is the ***slope*** of the and interpret your finding.

**Q20.** Explain the *constant returns to scale* (CRS), *decreasing returns to scale* (DRS), *increasing returns to scale* (IRS) production technology. Apply all to the Cobb Douglas production function 

**Q21.** Explain the profit maximising behaviour of a firm in detail. Provide profit maximising maximand and explain.

**Q22.**  find the *unconditional factor (or input) demand* functions for both inputs. What will the profit function look like?

**Q23.** Explain the behaviour of the *profit* and *supply* function for each functions :

 a. 

 b. 

 c. 

**Q24.**  find the *supply* function for this specific production technology.

**Q25.** Apply “Hotelling Lemma” and find the *supply function* for .

1. Explain the main idea behind Cost Minimisation Problem (CMP)
2. Why we call solution to CMP as conditional factor or input demands?
3. Explain CMP geometrically
4. Provide maximand for CMP and interpret!
5. Find conditional demands for the following function and interpret your findings.
6. Find the cost function for the following function and interpret your findings.
7. Find conditional demands for the following function and interpret your findings.
8. Find the cost function for the following function and interpret your findings.
9. Find conditional demands for the following function and interpret your findings.
10. Find the cost function for the following function and interpret your findings.
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14. Find the cost function for the following function and interpret your findings.
15. Find conditional demands for the following function and interpret your findings.
16. Find the cost function for the following function and interpret your findings.
17. Find conditional demands for the following function and interpret your findings.
18. Find the cost function for the following function and interpret your findings.
19. Show that at an interior optimum *price equals marginal cost*!
20. Draw *average cost* (AC) , *marginal cost* (MC) , and *supply functions* for the firm that possess Decreasing Returns to Scale (DRS). Interpret your graphs in **detail!**
21. Draw *average cost* (AC) , *marginal cost* (MC) , and *supply functions* for the firm that possess Increasing Returns to Scale (IRS). Interpret your graphs in **detail!**
22. Draw *average cost* (AC) , *marginal cost* (MC) , and *supply functions* for the firm that possess Constant Returns to Scale (CRS). Interpret your graphs in **detail!**
23. Explain the production and pricing behaviour of the firm that possess **non-convex** production technology!
24. Provide graphical representation of the Set-up Costs in **detail**!
25. Provide graphical representation of the Sunk Costs in **detail**!