



The South Indian Association's
The S.I.A. College of Higher Education
Affiliated to University of Mumbai
Accredited B+ by NAAC
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Near Balaji Mandir, Dombivli (East), 421203.

BCOM Question Bank

Question bank FYBCom
Sub: Economics

Module 1:

1. Explain the meaning, scope and importance of business economics.
2. Explain the concepts: incremental concept, marginal concept, and opportunity cost concept.
3. Discuss the concept of variables, functions, equations, and graphs using an example. (demand function, equation, and graph)
4. Explain the relation between TR, MR and AR.
5. Explain how equilibrium price is determined in the market.
6. Calculate TR, MR, and

AR

Price	Quantity	Total Revenue (P×Q)	Average Revenue (TR/Q)	Marginal Revenue (dTR/dQ)
5		400		
10		750		
15		1020		
20		1240		
25		1375		
30		1410		
35		1400		
40		1280		

7. Calculate TC, AC, and

MC

Quantity	FC	VC	TC	AC	MC
0	70	-			
1	70	50			
2	70	65			
3	70	75			
4	70	90			
5	70	120			
6	70	170			
7	70	200			

Module 2:

1. Explain the meaning, assumptions, explanation, and exceptions of the law of demand.
2. Write a note on the determinants of demand.
3. Explain the nature of demand curve under different market structures.
4. Explain price elasticity of demand.
5. Explain income elasticity of demand.
6. Explain cross elasticity of demand.

7. Explain promotional elasticity of demand.
8. Write a note on the methods of measuring price elasticity of demand.
9. What is the meaning and importance of demand forecasting?
10. Write a note on the steps of demand forecasting.
11. Explain survey methods of demand forecasting.
12. Explain statistical methods of demand forecasting.
13. Given following demand function $Q_d = 200 - 0.32P$, what is your forecast for Q_d when $P = 10, 20,$ and 30 ?
14. Given following demand function $Q_d = 60 - 0.7P$, if future price is $P = \text{Rs. } 20$, what is the forecast for quantity demanded?
15. Given following demand function $Q_d = 200 - 0.45P$, what is your forecast for Q_d when $P = 10, 50, 60$?

Module 3:

1. Explain the law of variable proportions.
2. Explain the law of returns to scale.
3. Write a note on the meaning and properties of isoquants.
4. Explain the concept of iso-cost line.
5. Discuss the concept of ridge lines.
6. How does a firm attain least cost combination of inputs?
7. Elaborate on the economies of scale.
8. Elaborate on the diseconomies of scale.
9. Explain the meaning and types of production function.

Module 4:

1. Explain any four cost concepts.
2. Discuss the break-even analysis using an example.
3. The LAC is also called an envelope curve. Justify the statement.
4. Explain the concept of learning curve.
5. Explain the relationship of average cost curves in the short-run.
6. Explain the concept of TC, TFC, and TVC using schedule and diagram.

Question bank SYBCom Sub: Economics

Module 1:

1. What is the meaning, scope, and importance of macroeconomics?
2. Why is the study of circular flow of income important?
3. Write a note on Say's law of markets.
4. Explain circular flow of income in a two-sector, three-sector, and four-sector economy.
5. Write a note on the meaning and importance of national income accounting.
6. Write a note on the concepts of national income.
7. What are the different the methods of measuring national income?
8. Explain the meaning, features, and phases of trade cycles.
9. Write short note on: a) Green National Income Accounting
b) Relation between NI and Economic Welfare

Module 2:

1. Explain the concept of effective demand given by Keynes. / explain the concept of aggregate demand function and aggregate supply function.
2. Write a note on the Keynesian consumption function.
3. What is the meaning of investment? Explain the types of investment and investment function.
4. Explain the concept of marginal efficiency of capital.
5. Write a note on the concept of multiplier.
6. Explain Keynes' psychological law of consumption and factors affecting marginal propensity to consume.
7. Write a short note on the paradox of thrift.
8. Explain the concept of APC, MPC, APS, MPS / write a note on the technical attributes of consumption and saving function.

Module 3:

1. Explain the IS curve and shift in IS curve.
2. Explain the LM curve and shift in LM curve.
3. Explain IS-LM equilibrium determination.
4. Explain the impact of monetary and fiscal policies on IS-LM model.
5. Write a note on Phillips curve.
6. Explain the long-run Phillips curve.
7. What do you mean by Stagflation? What are the causes of stagflation?
8. Write a note on the propositions of supply-side economics.

Module 4:

1. Write a note on the meaning and measures of money supply in India.
2. Write a note on the components, determinants and factors affecting money supply in India.
3. Write short note on : Velocity of circulation of money (with factors)
4. Explain Fisher's approach to demand for money.
5. Explain Cambridge approach to demand for money.
6. Explain Keynesian approach to demand for money.
7. Explain Friedman approach to demand for money.
8. Explain the concept of liquidity trap.
9. What is the meaning of inflation? What are the types of inflation?
10. Differentiate between demand-pull and cost-push inflation.
11. Write a note on the effects of inflation.
12. Discuss the nature of inflation in a developing economy.

Question bank TYBCom
Sub: Economics

Module 1:

1. Write a note on the New Economic Policy of 1991.
2. Explain the role of social infrastructure in education.
3. Health and family welfare are important focus areas for the government – discuss.
4. Discuss the importance of sustainable development goals in the recent scenario.
5. What are your opinions regarding Make in India.
6. Explain the Skill India initiative launched by the government.
7. Write a short note on Invest India initiative.
8. Write a short note on Skill India initiative.
9. What do mean by FDI? Explain the advantages and disadvantages of FDI.
10. Write a note on FIPB and its performance in India.
11. Explain the role of MNCs in developing countries.

Module 2:

1. Write a note on national agricultural policy 2000.
2. Write a note on agricultural price policy.
3. Explain the concept of agricultural finance and types of agricultural credit in India.
4. Write a note on non-institutional sources of agricultural credit.
5. Write a note on institutional sources of agricultural credit.
6. Explain the concept of and defects in agricultural marketing in India.
7. Write a note on agricultural marketing infrastructure.
8. Explain the role of technology in MIS in agriculture.
9. Write a note on marketing training in India.
10. What are the components of a supporting enabling environment?
11. Discuss recent developments in agricultural marketing.
12. Write a note on contract farming.

Module 3:

1. Write a note on the Competition Act, 2013.
2. Explain the disinvestment policy in India.
3. Write a note on the MSME sector and its contribution to the Indian economy.
4. Explain the meaning and causes of industrial pollution?
5. What are the effects of industrial pollution?
6. Explain measures taken to control pollution in India.
7. Explain the meaning and characteristics of service sector.
8. Write a detailed note on the role of healthcare as a service sector in India.
9. Write a detailed note on the role of tourism as a service sector in India.

Module 4:

1. Explain the progress of commercial banks after liberalization.
2. Bring out the measures of operational technology introduced in the banking system in the recent years.
3. Explain the issues and challenges in the banking sector in India.
4. What are the recent trends in insurance industry in India?
5. Write a note on IRDA.
6. Explain the structure of Indian Money Market.
7. What are the reforms in the Indian money market?
8. Write a short note on limitations of Indian money market.
9. Explain the structure of capital market in India.
10. Write a note on SEBI.
11. What are the reforms in capital market in India?

S.Y.B.COM SEM III

Subject:Computer Programming-I

UNIT I:Hardware

- 1.Explain the different generations of computers highlighting the improvements in them.
2. What are the different types of computer?
3. What are superComputers? What are their uses?
4. What is microcomputer? What are the reasons for its popularity? What are the types of microcomputer?
- 5.explain in brief about tablet computer and smartphones.
6. Explain any five characteristics of computer.
7. Explain in brief the functional units of computer.
8. Explain the function of the ALU and that of the registers within the ALU
9. Explain the different types of primary memory.
10. Explain different kinds of secondary memory available.
11. Explain about memory addressing capability of the CPU.
13. What are binary numbers? What are the rules of binary addition?
14. Explain how 1's complement and 2's complement representation of binary numbers is carried out.
15. Problem on Conversion of binary no to decimal no
16. Problem on Conversion of decimal no to binary no

UNIT 2:Software

- Q. What is the relationship between software and hardware?
- Q. Explain the need of software in computer system.
- Q. What are the categories into which software can be divided.
- Q. What is system software? What are the types of system software?
- Q. Define the term operating system. Give example.
- Q. What are the basic functions of an operating system?
- Q. What are utility programs.
- Q.What is language translator? Give three different types of language translator.
- Q. What are the differences between compiler and interpreter.

- Q. What is application software ?why it is needed?
- Q. Give three examples of application software and their application areas.
- Q. Define the term algorithm.
- Q. What are the qualities of good algorithm?
- Q. What is mean by efficient algo? Explain
- Q. Different problems to write algorithm.
- Q. What is flowchart? What are the different shapes used in flowchart.
- Q. Different problem on which flowchart to be drawn.
- Q. What is ecommerce? Why it is so popular now? Name few ecommerce sites.
- Q. Define term MIS.
- Q. Explain project management.
- Q. What is sales analysis? Why is it necessary?
- Q. What is the purpose of inventory control system.
- Q. Define the term risk analysis. What is it used for.

UNIT 3: Introduction to C-programming

- Q.Explain basic structure of C program
- Q. Write note on keywords.
- Q.Write note on identifiers.
- Q. What are different constants in C?
- Q. Explain data types used in C.
- Q. Write short note on escape characters.
- Q. Explain storage classes used in C
- Q. What are operators in C? Explain different types of operators used in C
- Q. Explain arithmetic operators.
- Q. Explain relational operators.
- Q. Explain logical operators.
- Q. Explain '=' and '==' operators
- Q. Explain printf() and scanf() function in C.
- Q. Explain gets() and puts() functions in C
- Q. Explain getchar() and putchar() function in C
- Q. Give difference between printf() and puts()
- Q. Give difference between gets() and scanf().

Q. Give output questions

Q. Program on above

Unit IV: Decision/loop statements

Q. Write short note on

1. if() 2. Break; 3. Continue; 4. Switch()

5. for() 6. While() 7.do..while()

Q. program on conditional statements

Q. Programs on looping statements.

classmate

Date _____
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F.R.A Theory Question

Q Explain the following

- i) Inter office adjustment
- ii) Rebate on bills Discounted
- iii) Money at call & short notice
- iv) NPA meaning classification provision
- v) Schedules of Banks P&L a/c or balance sheet
- vi) Reinsurance
- vii) Surrenders & annuities
- viii) Loans to policy holder
- ix) Reserve for unexpected risk
- x) Financial reporting meaning, significance, objects
- xi) Company a/c share capital ^{reserves & surplus}
Schedule Fixed assets & ^{and} contingent liabilities
Current liabilities & provision, current assets
loan & advances schedule.
- xii) Financial statement analysis meaning & purpose & types
- xiii) Ratio analysis meaning classification & types
- xiv) Cash flow analysis meaning & format.

PPT

- Ch01_Introduction_to_SPM.ppt
- Ch02_project_evaluation.ppt
- Ch03_Step_Wise.ppt
- Ch05_Software_effort_estimation.ppt
- Ch06_Activity_planning.ppt
- Ch07_risk_management.ppt
- Ch08_Resource_allocation.ppt
- Ch09_Monitoring_and_control.ppt
- Ch10_Managing_contracts.ppt
- Ch11_Managing_people.ppt
- Ch12_Working_in_teams.ppt
- Ch13_1_product_quality.ppt
- Ch13_2_Software_Process_Quality.ppt
- Ch14_project_closeout.ppt

Question Bank

UNIT I

INTRODUCTION TO SOFTWARE PROJECT MANAGEMENT

1. What is software project management?
2. What is a project?
3. Define process.
4. List the characteristics of software projects.
5. What is contract management?
6. Difference between contract management and technical project management.
7. What is the difference between feasibility study and planning?
8. How plans, methods and methodologies differ from each other?
9. What are the types of designs in software project?
10. What are the three successive process of software project management?
11. What are the categories of software projects?
12. What are the activities of project management?

13. What is activity plan?
14. What are the elements of product descriptions?
15. What do you mean by project breakdown structure?
16. What are the steps involved in identification of project scope and objectives?
17. Explain the various activities covered by software project management.
18. Give an outline of step wise planning activities for a project with neat diagram.
19. Diagrammatically explain the ISO 12207 SDLC activities.
- 20 List the Outline of stepwise project planning.
21. For each stage of a typical IS development project list the type of personnel who are likely to be involved.
22. Identify the data that you would collect to ensure that during execution of project things are going according to plan

UNIT II

PROJECT EVALUATION

1. What is strategic assessment?
2. Difference between strategic assessment and technical assessment.
3. How to identify and estimate the cost of project?
4. What is cash flow?
5. How will you find the present value of future cash flow?
6. Write short notes on cash flow forecasting life cycle?
7. What is payback period?
8. What is ROI? How it is calculated?
9. Calculate the ROI for a software project development, where the net profit is 60,000 and the total investment is 300,000.
10. How to calculate the net present value for a software project?
11. Define risk profile analysis.
12. What are the different types of cost related to project development?
13. How are risks identified?
14. What is IRR? How is calculated?
15. What are the advantages of using IRR method?
16. What is meant by project portfolio?
17. How are decision trees helpful in risk handling?
18. Describe how cost- benefit evaluation techniques can be used to choose the best among competing project proposal.
19. Discus the typical product life cycle cash flows in project development.

20. Explain how project can be evaluated against strategic, technical and economic criteria.
21. What is risk management? How the risks are evaluated in software projects?
22. Explain in detail about the Amanda's decision tree.
23. Discuss cash flow forecasting.
24. What do you mean by cost benefit analysis? Explain the different categories of cost in detail.

UNIT III

ACTIVITY PLANNING

1. List the objectives of planning?
2. What are the advantages of project scheduling?
3. Define activity.
4. What is Activity –on- arrow (AOA) and Activity-on-node (AON)?
5. What are the different approaches used in identifying activities?
6. Define a product breakdown structure.
7. What is a hybrid approach of project scheduling?
8. What is SSADM?
9. What is forward pass?
10. Difference between forward pass and backward pass.
11. Write short notes on Hammock activities.
12. Why a network should not contain dangles?
13. List the types of activity float?
14. How to shorten the project duration?
15. What is Risk management?
16. How are risk classified?
17. List the factors involved in risk planning.
18. What are steps involved in planning for risk?
19. Define a brainstorming technique.
20. Write short notes on Hazards identification.
21. Explain the objectives of activity planning in detail.
22. Explain the different approaches of project activities.
23. What is project schedule? Explain the stages of project schedules.
24. Explain with an example how critical path can be identified in precedence networks.
25. Discus the network model represented by the CPM network.
26. How to formulate a network model in projects?

27. Explain the categories of risk framework.
28. Briefly explain the risk planning in project development.
29. Explain risk planning and control in detail.
30. Define hazard. How are hazards identified and analyzed?
31. Describe with an example how the effect of risk on project schedule is evaluated using PERT.

UNIT IV MONITORING AND CONTROL

1. What are the different ways of collecting data?
2. What are the different categories of reporting?
3. Define a checkpoint.
4. What are the techniques used in visualizing progress.
5. Write any two advantages of function point analysis.
6. Write short notes on cost monitoring?
7. List the change control procedures?
8. What is earned value?
9. What is monitor earned value?
10. List the methods for assigning earned value in earned value analysis.
11. List the various prioritizing levels to monitor the project?
12. What are the roles of configuration librarian's?
13. What are the supply processes in managing contract?
14. What are the different types of contracts?
15. List the various typical terms of a contract?
16. Write short notes on contract management?
17. Define change control.
18. Explain in detail about creating the framework for monitoring & control.
19. What are the different types of visualizing progress explain in detail?
20. Explain how to get back the project to target.
21. Assessing the state of project.
22. Controlling changes to a project requirement.
23. Discuss the change control procedures in detail.
24. Explain the managing contract under ISO 12207 approach.
25. Explain the different stages in contract placement.
26. Explain the earned value analysis methods.

UNIT V
MANAGING PEOPLE AND ORGANIZING TEAMS

1. Define organizational behaviour.
2. List the various motivation theories.
3. What is motivation under the Taylor's model?
4. Mention the two factors of Herzberg's theory.
5. Write down the stages of team formation model.
6. What are the methods used to improve motivation?
7. Define job enlargement and job enrichment.
8. Mention the different categories of decisions.
9. How are leadership style classified?
10. How to work in a group?
11. Write short notes on leadership?
12. Define organization.
13. Define stress.
14. Give the difference between personal and organizational stress.
15. What are the responsibilities to make safety?
16. How is stress caused?
17. Explain the Oldham-hackman job characteristic model.
18. Explain in detail about decision making.
19. Explain how new staff can be selected and inducted into a project.
20. Explain to improve group performance.
21. List the factors that are involved in making a team. Explain the characteristics.
22. Discus in detail about the organizational structures.
23. Define motivation. Explain the theories of motivation.
24. Explain the methods to increase staff motivation.
25. Write a note on leadership styles.
26. Write notes on stress handled in development process.
27. Give a brief note on health and safety issues.



The S.I.A College of Higher Education, Dombivli
Remedial Unit wise Question Bank March 2019-20

Subject: Embedded System

1. What is interrupt? Explain its role in embedded system designing.
2. What is multiprocessor communication? Explain the communication of 8051 microcontroller with the help of serial communication.
3. What is Kernel? How it is useful for System Development?
4. Define 'Thread'? Explain multiprocessing with respect to threading?
5. Explain the advantages of 'Higher level language' in embedded firmware development?
6. Define Monolithic and Microkernels? Differentiate between them?
7. Explain the different phases of EDLC.
8. Draw and compare waterfall model and Evolutionary of EDLC.
9. Draw and explain fountain model of EDLC.
10. Draw and explain Spiral model of EDLC
11. What are objectives of EDLC? Explain all objectives in brief.
12. What is difference between standard product development cycle and application specific product development cycle?
13. Which are the components used as core of an embedded systems? Explain the merits, drawbacks in there domain where they are commonly used?
14. What is difference between standard product and application specific integrated circuit?
15. Explain the role of microprocessor and microcontroller in embedded systems design. Differentiate between microprocessor and microcontroller
16. What is processor architecture? What are the different architecture available for processor controller?
17. What is difference between big-endian and little-endian processors?
18. What are different types of memories used in Embedded system designing? Explain Flash memory in detail.
19. What is IDE ? Write short note on Keil micro vision.
20. Explain how important is the embedded firmware? What are different approaches available for it?
21. Write a note on watchdog timer and its importance.
22. What is interrupt? Explain its role in embedded system designing.
23. Explain the components of typical Embedded System in details.
24. What is difference between Von-Neumann and Harvard architecture? Explain with diagram.
25. Explain the difference between 'Super loop' based and 'OS' based embedded firmware designing? Which one is better approach?
26. Explain the advantages of 'Assembly level language' in embedded firmware development?
27. Explain the operating system architecture in brief?
28. What is interrupt? Explain its role in embedded system designing.
29. What is multiprocessor communication? Explain the communication of 8051 microcontroller with the help of serial communication.

30. Define 'Process'? Explain the structure of process?
31. Write an 8051 C program to get a byte of data from P0. If it is less than 100 send it to P1 otherwise send it to P2.
32. What is IDE ? Write short note on Keil micro vision.
33. Find the values of TMOD register in Mode 0 Timer 0. Write a program to toggle all bits of P1 continuously.
34. Explain the different technique of delay generation in embedded C. Give programming example for each.
35. Explain how important is the embedded firmware? What are different approaches available for it?
36. Explain the ports and its functions in detail.
37. Explain quality attribute in the system development context. What are the different quality attribute to be considered while system designing?
38. Explain the quality attribute Portability in the embedded system design context? Cite example depending upon that attribute?
39. What are non-operational quality attribute? Explain all.
40. Explain Time-to-prototype? What is significance in product development?
41. Explain the role of Application specific designing in different types of Embedded systems? Explain automotive domain?
42. Explain the quality attribute Information security in the embedded system design context? Cite example depending upon that attribute?



1. What are low and high-level languages? State the advantages of assembly level language over high-level language?
2. List and explain with examples, the four categories of 8085 instructions that manipulate data?
3. List and explain the four operations commonly performed by the MPU? How many locations can be addressed by a microprocessor with 14 address lines?
4. What is the function of accumulator? While executing program, when MPU completes fetching of the machine code located at the memory address 6057H, what are the contents of program counter?
5. What are tristate devices and why are they essential in bus-oriented system?
6. Draw and explain 8085 pin out diagram according to classification in six groups: a) address bus b) data bus c) control and status signals d) Power supply and frequency signals e) externally initiated signals and f) serial I/O ports.
7. Explain the difference between the machine level language and assembly level language of 8085 microprocessor?
8. Explain the different four types of instructions in 8085? Explain all with suitable examples.
9. What is bus? Specify the functions of the address bus and the direction of the information flow on the address bus?
10. What is flag? Why the stack pointer and program counter 16-bit register?
11. How many address lines are used in to identify I/O port in the peripheral I/O and memory mapped I/O methods? Explain in brief.
12. Explain tri-state devices? Draw and explain the 4to16 decoder that goes low if the input to the decoder is as shown in fig.3.29
13. Draw the table of 8085 Machine cycle status and control signal, Explain how control signals are generated from I/M, S0 & S1?
14. Draw and explain Data Flow diagram from memory to MPU?
15. Draw timing transfer diagram of Byte from memory to MPU, Explain in brief?
16. Draw and explain Flag register in brief? Also, explain how flags are modified during instruction execution with examples.
17. Explain the timing diagram of memory write cycle of de-multiplexing of address and data bus?
18. Explain all signals involved in diagram.
19. Draw and label 8085 architectural block diagram according to classification in six groups: a) address bus b) data bus c) control and status signals d) Power supply and frequency signals e) externally initiated signals and f) serial I/O ports.
20. Explain externally initiated signals including interrupts in 8085 in brief?
21. Explain the generation of memory and I/O control signals with diagram?
22. Draw and explain timing diagram for execution of the instruction MVI A, 32H?

23. Explain the timing diagram of memory read cycle of de-multiplexing of address and data bus?
24. Explain all signals involved in diagram.
25. Write a note on Address decoding mechanism used in 8085. Explain the concept with appropriate example.
26. Specify the register contents and the flag status as the following instructions are executed,

Initial Contents :	A	B	S	Z	CY
		00	FF	0	1 0

MVI A,F2H

MVI B,7AH

ADD B

OUT PORT0

HLT

27. What operations can be performed using the instruction SUB A? Specify the status of Z and CY with example.
28. The following instructions subtract two unsigned numbers. Specify the contents of register A and the status of the S and CY flags. Explain the significance of the sign flag if it is set.

MVI A,F8H

SUI 69H

29. What operations can be performed by using instruction ORA A? Specify the status of Z and CY flag with program example.
30. Write a note on data transfer and arithmetic instructions in 8085?
31. The following instructions subtract two unsigned numbers. Specify the contents of register A and the status of the S and CY flags. Explain the significance of the sign flag if it is set.

MVI A,F8H

SUI 69H

32. What operations can be performed by using instruction XRA A? Specify the status of Z and CY flag with program example.
- 33. What are the different types of Computer Languages?**
- 34. Differentiate between ROM & EPROM.**
- 35. What are types of interfacing in 8085 processor?**
- 36. List & Explain Flag Register.**
- 37. Explain with block diagram temperature controlled Microprocessor System.**
- 38. What are the applications of Microprocessor?**

39. Write a Short Notes on Memory mapped I/O.
40. Explain how mechanical switch works.
41. What is LDA & STA instruction?
42. What are the Classification of instruction based on Byte Length?
43. Explain with example Immediate Addressing mode.
44. What are Logical operation in Assembly Language? Explain.
45. How troubleshooting I/O interfacing circuits works.
46. Explain with example Mnemonics.
47. What is Program Counter (PC)?
48. What is Dynamic Debugging?
49. Write Short notes on Stacks and Subroutine.
50. What is Advanced Subroutine? Explain.
51. How BCD to Seven Segment Led code conversion works? Explain.
52. Write a short notes on LHLD & XCHG instruction.
53. List & Explain Microprocessor based software development system.
54. Explain Assembler.
55. What is Loader?
56. What are types of interrupts in 8085?
57. List and explain Special Pentium Register.
58. What are different Pentium register?
59. Compare between Core i3 & i5.
60. What is CPUID?
61. Explain CMPXCHG8B.
62. What are the features of Special Pentium PRO?



Semester:IV

1. What is RAID? Explain its features with it levels.
2. Draw architectural block diagram of 8051?
3. Write the short note on Program counter, Data Pointer and PSW?
4. What are SFRs? List and specify their functions?
5. Draw and explain TMOD and IE registers?
6. Add 1 to register A by using five different instructions? Explain each with reference to addressing modes.
7. Explain the Calls and Stack concept with diagram?
8. PCI bus
9. Counter/Timer in 8051
10. Explain RAID 0 and RAID 1 in details?
11. What is cache memory? Explain different levels of cache ?Why it is needed
12. Draw architectural block diagram of 8051?
13. Write the short note on SCON, TMOD and PSW?
14. What are SFRs? List and specify their functions?
15. Draw and explain IP and IE registers?
16. Explain the Calls and Stack concept with diagram?
17. Explain Timer applications in 8051
18. Explain the various purposes of embedded systems in detail with illustrative examples?
19. What is difference between Application specific Integrated circuit (ASIC) and Application specific standard product (ASSIP)?
20. What is Digital Signal Processor (DSP) ? Explain the role of DSP in embedded system?
21. What are sensors and actuators? Explain their roles in embedded system?
22. Explain the different on-board communication interfaces?
23. Compare the operation of ZigBee and Wi-fi network technologies?
24. Explain the different characteristics of embedded systems in details?
25. Explain quality attributes in embedded system development context? What is operational quality attributes?
26. Explain the nonoperational quality attributes in detail?
27. Explain the domain specific embedded systems and their importance in designing?
28. What is difference between microprocessor and microcontroller? Explain the role of microprocessor and controller in embedded environment?
29. What is difference between RISC and CISC processors?
30. Which are the components used as core of an embedded systems? Explain the merits, drawbacks in there domain where they are commonly used?

31. What is difference between standard product and application specific integrated circuit?
32. Explain the role of microprocessor and microcontroller in embedded systems design. Differentiate between microprocessor and microcontroller
33. What is processor architecture? What are the different architecture available for processor controller?
34. Explain quality attribute in the system development context. What are the different quality attribute to be considered while system designing?
35. What are operational quality attribute? Explain all
36. What are non-operational quality attribute? Explain all.
37. Analyze the Internal Project and explain Operational and Nonoperational attributes of systems.
38. Write an 8051 C program to get a byte of data from P0. If it is less than 100 send it to P1 otherwise send it to P2.
39. What is IDE ? Write short note on Keil micro vision.
40. Find the values of TMOD register in Mode 0 Timer 0. Write a program to toggle all bits of P1 continuously.
41. Explain the different technique of delay generation in embedded C. Give programming example for each.
42. Write a note on watchdog timer and its importance.
43. Draw and explain the DMA controller and its role in embedded system?
44. What is interrupt? Explain its role in embedded system designing.
45. What is multiprocessor communication? Explain the communication of 8051 microcontroller with the help of serial communication.
46. Explain the auto reload mode of operation of timer. What are other modes of operation?
47. What is the structure of IE and IP register? Draw and explain.
48. What is operating system? What are the main components of operating system? Explain it?
49. What is Kernel? How it is useful for System Development?
50. Explain the different phases of EDLC.
51. Draw and compare waterfall model and Evolutionary of EDLC.
52. Draw and explain fountain model of EDLC.
53. Draw and explain Spiral model of EDLC
54. Explain the ports and its functions in detail.
55. What is difference between RISC and CISC processor? Give an example of each.
56. What is difference between big-endian and little-endian processors?
57. Explain how important is the embedded firmware? What are different approaches available for it?
58. Compare and differentiate SRAM and RAM?
59. Implement EDLC for Internal Project and do analysis?



The S.I.A College of Higher Education

Question Bank

Subject: Imperative Programming

Subject Teacher: Shilpa Nimbre

Year 2019-20

UNIT I

- What do you mean by imperative programming? Explain different types of imperative programming.
- What is the difference between machine level language and high level language?
- List and explain five desirable program characteristics.
- What is the role of compiler and interpreter in program.
- What is mean by compilation? What is mean by interpretation? How do these two processes differ?
- What is program development life cycle? Explain its various stages.
- Explain different types of programming language.
- What is an algorithm? What are the characteristics of an algorithm.
- Explain flowchart with its symbol
- Draw a flowchart to generate numbers from 1 to 10.
- Draw a flowchart for finding factorial of a number.
- Draw a flowchart to find largest of 3 numbers
- Draw a flowchart and pseudo code of a program that doubles a number.
- Draw flowchart to find roots of quadratic equation.
- Draw flowchart to find reverse of a number
- Draw a flowchart to check whether number is palindrome.
- Describe the structure of a C program.
- What are the various data types in C? Explain them.
- Write the rules for all numeric constants in C.
- What is variable? How are they declared and used in expressions in C?
- Determine if the following identifiers are valid in C.
 - 1> record l
 - 2> \$tax
 - 3>123_456_789

- 4> address and name
- 5> file_3
- What is variable? How does an array variable differ from an ordinary variable.
- What are the classes of statements in C? Describe the composition of each.
- Explain the following with example
 - 1. Symbolic constants
 - 2. Escape sequences
- Determine if the following constants are valid.
 - 1. 27,822
 - 2. 0.8E8
 - 3. "Name:"
 - 4. "1.3e-12"
 - 5. 0xBCFDAL
- Define keywords and identifiers in C language. Also differentiate between keywords and identifiers.
- What is constant? List various constants in C. Explain any two in detail with suitable example.

UNIT II

- Explain the increment and decrement operator in C with example.
- Describe two different ways to utilize the increment and decrement operators. Explain with example.
- Explain following with suitable example
: ? , += and %=
- Explain the following functions in C
 - sin()
 - exp()
 - pow()
 - tolower(c)
 - putchar(c)
- Explain the concept of operator precedence and associativity. What are the relative precedence and associability of the arithmetic operators?

- What do you understand from hierarchy/precedence of operators? What is hierarchy of operators in c?
- Write a C program to find the maximum of two numbers using conditional operators.
- How putchar and getchar functions are used within a C program? Explain with the help of example.
- Explain the conditional operator and assignment operator in C with example.
- What is relational expression? List all operators used with it.
- Explain the purpose and use of following operators with suitable examples
 - == and =
 - Conditional operator(? :)
- C program contains the following declarations and initial assignments

```
int i=8,j=5;
float x=0.005, y=0.001;
```
- Determine the value of each of the following expressions
 - $2*(i/5) + (4*(j-3)) \% (i+j-2)$
 - $(x>y) \&\& (i>0) \parallel (j<5)$
- Describe the five arithmetic operators in C
- Explain the conditional operator in C with example.
- Write a C program to find maximum of two numbers using conditional operators
- Write a program in C to swap two numbers without using third variable
- Write a program in C to solve the following expression $F=P(1+i)^n$
- Write an interactive C program to find roots of a quadratic equation $ax^2 + bx + c = 0$ and roots are given by $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
- Describe the syntax of the scanf () statement in C.
- Compare the gets and puts functions with scanf and printf statements.
- What is the purpose of control string in a scanf function? Summmarize the meaning of the most commonly used conversions characters within the control string of a scanf function.
- How putchar and getchar functions are used within a C program? Explain with the help of example.
- Explain gets and printf statements used in C programming language.
- Write a short note on scanf function.

- Explain the gets and puts functions used in C programming language.
- Write a program in C to find the area and circumference of a circle.
- Write a program in C to find fourth roots of a number entered by the user.

UNIT III

- What are control statements? Explain any two of them.
- Describe the syntax of for statement in C. Explain with suitable example.
- What is the conditional statement in C? Describe its various syntax.
- Write the syntax of if-else statement in C. What are nested 'if' statements.
- Explain if-else statement with an example.
- Write the use of break, continue and goto statements.
- Define looping. Compare different types of looping statements.
- What is the difference between while and do-while statements in C. When to use which loop
- Write a program in C to generate the Fibonacci series (0, 1, 1, 2, 3, 5, 8.....) n terms using a while loop.
- Write a C program to find the sum of natural numbers using recursive functions.
- Write a program in C to find the sum of the series $Y=1^2+2^2+3^2+4^2+\dots+n^2$ using a while loop.
- Write a program in C to find the sum of squares of digits of a number.
- Write the general syntax for function declaration and definition. Explain with example.
- Write a function fact() in C to find the factorial of a number and use it to generate factorial of numbers from 1 to 10.
- Explain with example various ways of calling a function in C.
- Write a short note on C library functions.
- Write a C program to check whether the entered number is Armstrong or not.
- Explain two different ways to pass argument to a function with the help of example.
- Write a function in C to swap two integer variables using call by value and call by reference.
- Explain call by value and call by reference.
- Explain the switch...case statement in C with an example.
- Explain the following with respect to function in C

- i. Function prototype
- ii. Formal arguments
- iii. Return expression
- What is a function? Explain the purpose of function prototype, function call and function definition in a C program.
- What is recursion? Write a recursive function to calculate factorial of a number.
- Explain the function with an example.

UNIT IV

- What are storage classes in C? What is their scope in C?
- Compare automatic and external variable.
- What is static variable? How it is defined and initialized in a single-file program.
- Explain the meaning of following keywords in C
 - i. Auto
 - ii. Register
 - iii. static
- What do you understand from storage classes? List various storage classes? Explain any two.
- What is the purpose of a static function in a multifile program? Explain with suitable example.
- What is meant by storage class of a variable?
- Write short note on global variable.
- What are preprocessor directives in C? Explain #include and #define in C.
- Write the similarities and difference between macros and function.
- Write the purpose of the most commonly used C preprocessor directives
- Write the use of #define directive. Also give suitable examples.
- What is a macro? Write a program in C to find the area of a rectangle and square using macros.
- What are preprocessors in C language? Explain #if -#else- #endif preprocessor directive with suitable example.
- What is macro? Summarize the similarities and differences between macros and functions..
- What are preprocessor directives in C? Explain #include and #define in C.

- What are two dimensional arrays in C? How can they be declared and initialized in C?
- Write a program in C to find the sum of 20 double values entered by the user.
- Write a short note on strings in C.
- Explain the following functions in C:-
 - i.) strcat()
 - ii.) strlen()
 - iii.) strcmp()
- WAP to perform addition of two matrices.
- WAP to demonstrate the use of strlen, strcpy, strcmp and strcat string functions
- What is an array? How can a single dimensional array be initialized?
- Write a program in C to check whether a number is stored in an array of ten integers. If present display its position else display appropriate error message.
- Explain strlen, strcat, strcmp functions with example
- What is an array? What are the advantages of using arrays? discuss one dimensional array.
- Write a C program to find largest number out of given numbers stored in an array using a function.
- Write a program in C to arrange the 'n' numbers stored in the array in ascending order.
- What is a two dimensional array? How can they be declared and initialized in C?

UNIT V

- What are pointers in C? Write a program in C to add 2 float numbers using pointers.
- Write a short note on pointer arithmetic in C.
- Explain the terms "array of pointers" and "pointer to an array" in C.
- Write short note on array of pointers
- Write a C program to do addition and subtraction of two pointer variables.
- Explain
 - 1. pointer declaration
 - 2. '*' and '&' operators used with pointers.
- Write a c program to display the cube of ten elements of an integer array using pointers.
- Explain the term pointers with an example.

- Write a C program to perform addition of two pointer variable.
- Write a short note on pointer arithmetic.
- Define structure book containing 3 members called title, author and price. Write a C program that would assign values to the individual members and display the same.
- What is the difference between array and structure.
- Explain how union can be declared in C and for what kinds of applications are union useful?
- Explain nested structure in C with example.
- How array can be used in structure? Explain array of structure variables.
- Differentiate between structure and union.
- What is an array within the structure and array of structure?
- Explain nested structure in C with an example.



1. What are low and high-level languages? State the advantages of assembly level language over high-level language?
2. List and explain with examples, the four categories of 8085 instructions that manipulate data?
3. List and explain the four operations commonly performed by the MPU? How many locations can be addressed by a microprocessor with 14 address lines?
4. What is the function of accumulator? While executing program, when MPU completes fetching of the machine code located at the memory address 6057H, what is the contents of program counter?
5. What are tristate devices and why are they essential in bus-oriented system?
6. Draw and explain 8085 pin out diagram according to classification in six groups: a) address bus b) data bus c) control and status signals d) Power supply and frequency signals e) externally initiated signals and f) serial I/O ports.
7. Explain the difference between the machine level language and assembly level language of 8085 microprocessor?
8. Explain the different four types of instructions in 8085? Explain all with suitable examples.
9. What is bus? Specify the functions of the address bus and the direction of the information flow on the address bus?
10. What is flag? Why the stack pointer and program counter 16-bit register?
11. How many address lines are used in to identify I/O port in the peripheral I/O and memory mapped I/O methods? Explain in brief.
12. Explain tri-state devices? Draw and explain the 4to16 decoder that goes low if the input to the decoder is as shown in fig.3.29
13. Draw the table of 8085 Machine cycle status and control signal, Explain how control signals are generated from I/M, S0 & S1?
14. Draw and explain Data Flow diagram from memory to MPU?
15. Draw timing transfer diagram of Byte from memory to MPU, Explain in brief?
16. Draw and explain Flag register in brief? Also, explain how flags are modified during instruction execution with examples.
17. Explain the timing diagram of memory write cycle of de-multiplexing of address and data bus?
18. Explain all signals involved in diagram.
19. Draw and label 8085 architectural block diagram according to classification in six groups: a) address bus b) data bus c) control and status signals d) Power supply and frequency signals e) externally initiated signals and f) serial I/O ports.
20. Explain externally initiated signals including interrupts in 8085 in brief?
21. Explain the generation of memory and I/O control signals with diagram?
22. Draw and explain timing diagram for execution of the instruction MVI A, 32H?

23. Explain the timing diagram of memory read cycle of de-multiplexing of address and data bus?
24. Explain all signals involved in diagram.
25. Write a note on Address decoding mechanism used in 8085. Explain the concept with appropriate example.
26. Specify the register contents and the flag status as the following instructions are executed,

Initial Contents :	A	B	S	Z	CY
		00	FF	0	1 0

MVI A,F2H

MVI B,7AH

ADD B

OUT PORT0

HLT

27. What operations can be performed using the instruction SUB A? Specify the status of Z and CY with example.
28. The following instructions subtract two unsigned numbers. Specify the contents of register A and the status of the S and CY flags. Explain the significance of the sign flag if it is set.

MVI A,F8H

SUI 69H

29. What operations can be performed by using instruction ORA A? Specify the status of Z and CY flag with program example.
30. Write a note on data transfer and arithmetic instructions in 8085?
31. The following instructions subtract two unsigned numbers. Specify the contents of register A and the status of the S and CY flags. Explain the significance of the sign flag if it is set.

MVI A,F8H

SUI 69H

32. What operations can be performed by using instruction XRA A? Specify the status of Z and CY flag with program example.



2019

The S.I.A College of Higher Education

Remedial Question Bank – SYIT SEM III

Subject: CN

Unit 1:

- a. Explain the types of transmission modes for data flow.
- b. Discuss the advantages and disadvantages of different network topologies.
- c. What is Shannon capacity of noisy channel?
The signal-to-noise ratio is given as 36dB and the channel bandwidth is 2 MHz. Calculate theoretical channel capacity.
- d. What are the different types of transmission impairments?
- e. Distinguish between data rate and signal rate.
A signal is carrying data in which one data element is encoded as one signal element ($r=1$). If the bit rate is 100kbps, what is the average value of the baud rate if c is between 0 and 1?
- f. Define constellation diagram. Explain its role in analog transmission.

- a. State and explain various types of networks. What are the different ways to access the Internet?
- b. What is Internet standard? Explain the maturity levels of RFC.
- c. Protocol layering can be found in many aspects of our lives such as air travelling. Imagine you make a round-trip to spend some time on vacation at a resort. You need to go through some processes at your city airport before flying. You also need to go through some processes when you arrive at the resort airport. Show the protocol layering for the round trip using some layers such as baggage checking/claiming, boarding/unboarding, takeoff/landing.
- d. Discuss the different quality of service characteristics for overall network performance
- e. What are the different modes in which the transmission of binary data can be accomplished? Explain each mode.
- f. Draw the constellation diagram for the following cases. Find the peak amplitude value for each case and define the type of modulation (ASK, FSK, PSK, or QAM). The numbers in parenthesis define the values of I and Q respectively.
 - i. Two points at (2, 0) and (3, 0)
 - ii. Two points at (3, 0) and (-3, 0)
 - iii. Four points at (2, 2), (-2, 2), (-2, -2), and (2, -2)
 - iv. Two points at (0, 2) and (0, -2)

- a. Define Data Communication. Explain its various components.
- b. List and explain the functions of ISO's OSI Model Layers.
- c. What do you mean by Transmission line Impairments? Explain in detail.
- d. Explain the following terms in relation with Data Communication
 - (i) Half Duplex System.
 - (ii) Full Duplex System.
- e. Define Modulation. Write a short note on Amplitude Modulation.
- f. Explain the following terms of Data Transmission
 - (i) Parallel Transmission.
 - (ii) Serial Transmission.

Unit 2:

- a. Describe the goals of multiplexing. Which are the 3 multiplexing techniques?
 - b. Define FHSS (Frequency Hopping Spread Spectrum). Explain how it achieves bandwidth sharing.
 - c. Discuss the advantages and disadvantages of optical fiber.
 - d. Explain the two technologies of circuit switching.
 - e. List and explain the services provided by data link layer.
 - f. How does a single-bit error differ from a burst error?
-
- a. List the different error correcting codes. Explain any two in detail with examples.
 - b. What are the functions of data link layer? What is the relationship between packets and frames? Explain the different methods of framing.
 - c. We need to use synchronous TDM and combine 20 digital sources, each of 100 Kbps. Each output slot carries 2 bits from each digital source, but one extra bit is added to each frame for synchronization. Answer the following questions:
 - i. What is the size of an output frame in bits?
 - ii. What is the output frame rate?
 - iii. What is the duration of an output frame?
 - iv. What is the output data rate?
 - v. What is the efficiency of the system (ratio of useful bits to the total bits)?
 - d. What are the different types of transmission media? Explain each type.
 - e. What is virtual circuit network? What are its characteristics?
 - f. Explain the three phases of communication in a circuit switched network.

- a. Differentiate between Frequency Division Multiplexing (FDM) and Time Division Multiplexing (TDM).
- b. Write a short note on Spread Spectrum Modulation (SSM) techniques along with its Application.
- c. Discuss the major classifications of transmission media.
- d. What is Packet Switching? Explain its methods of implementation.
- e. Define Error under scope of networking and explain its types.
- f. Explain the following terms
 - (i) Forward Error Correction (FEC).
 - (ii) Automatic request for Retransmission (ARQ).

Unit 3:

- a. Compare and contrast flow control and error control.
 - b. Explain the working of stop-and-wait protocol.
 - c. Discuss the concept of pure ALOHA.
 - d. Write note on TDMA (Time Division Multiple Access).
 - e. Discuss any five characteristics of standard Ethernet.
 - f. Write short note on routers.
-
- a. Explain ALOHA system with its two versions.
 - b. Discuss GO BACK N ARQ protocol in detail.
 - c. Explain Bluetooth Layered Architecture.
 - d. Differentiate between satellite communication and optical communication.
 - e. Explain the following connecting devices in networking
 - (i) Bridge.
 - (ii) Gateway.
 - f. Explain CSMA with collision detection.

- a. What is HDLC? What are the different types of frames in HDLC? Explain the different fields in HDLC frames.
- b. Explain the transition phases of point-to-point protocol.
- c. Discuss the addressing mechanisms of IEEE 802.11 project.
- d. Explain the architecture of Bluetooth.
- e. Explain the spanning tree algorithm.
- f. What is Virtual LAN? How are stations grouped into different VLANs? Explain.

Unit 4:

- a. List and explain the services provided by network Layer.
- b. Write short note on NAT (Network Address Resolution)

- c. What is fragmentation? Discuss the three fields in an IP datagram related to fragmentation.
- d. How to overcome instability in distance vector routing algorithm.
- e. Discuss different timers in RIP (Routing Information Protocol).
- f. Differentiate between IPv4 and IPv6.

- a. Explain the two ways of forwarding of IP packets.
- b. What is dynamic host configuration protocol? Explain the DHCP message format.
- c.
 - i. Assume the shortest path in a graph from node A to node H is $A \rightarrow B \rightarrow H$. Also assume that the shortest path from node H to node N is $H \rightarrow G \rightarrow N$. What is the shortest path from node A to node N?
 - ii. Explain why a router using link-state routing needs to receive the whole LSDB before creating and using its forwarding table. In other words, why can't the router create its forwarding table with a partially received LSDB?
 - iii. Is the path-vector routing algorithm closer to the distance-vector routing algorithm or to the link-state routing algorithm? Explain.
- d. What is routing information protocol? Explain the RIP algorithm.
- e. Draw and explain the IPv6 header format.
- f. What are the different transition strategies from IPv4 to IPv6? Explain.

Unit 5:

- a. Explain the concept CSMA/CA.
- b. Explain the services provided by User Datagram Protocol (UDP).
- c. Discuss the three-way handshaking in TCP (Transmission Control Protocol) for connection establishment.
- d. Explain the process of transferring a mail.
- e. Explain the architecture of World Wide Web (WWW).
- f. Briefly explain the different timers in TCP (Transmission Control Protocol).

- a. With the help of a diagram, explain the Go-Back-N protocol.
- b. Explain the persistent and non-persistent connection
- c. Explain the architecture of electronic mail.
- d. What is DNS? How is name-address resolution done?
- e. What is secure shell? Explain the components of secure shell.
- f. In a network with fixed value for $m > 1$, we can either use the Go-Back-N or the Selective-Repeat protocol. Describe the advantage and the disadvantage of using each. What other network criteria should be considered to select either of these protocols?



Assignment 1

1. Find the inverse of the matrix by using adjoint method

$$i) A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix} \quad ii) B = \begin{bmatrix} 3 & -3 & 4 \\ 2 & -3 & 4 \\ 0 & -1 & 1 \end{bmatrix}$$

2. Express the matrix as sum of symmetric and skew symmetric matrices

$$A = \begin{bmatrix} 1 & 0 & 5 & 3 \\ -2 & 1 & 6 & 1 \\ 3 & 2 & 7 & 1 \\ 4 & -4 & -2 & 0 \end{bmatrix}$$

$$3. \text{ Find Rank of the following: } i) A = \begin{bmatrix} 3 & -1 & 2 \\ -6 & 2 & 4 \\ -3 & 1 & 2 \end{bmatrix} \quad ii) B = \begin{bmatrix} 1 & 1 & -1 & 1 \\ 1 & -1 & 2 & -1 \\ 3 & 1 & 0 & 1 \end{bmatrix}$$

$$4. \text{ Reduce the matrix into Normal form and find its Rank } \begin{bmatrix} 8 & 1 & 3 & 6 \\ 0 & 3 & 2 & 2 \\ -8 & -1 & -3 & 4 \end{bmatrix}$$

$$5. \text{ Verify A is orthogonal matrix and hence find } A^{-1} \text{ where } A = \frac{1}{3} \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & -2 \\ -2 & 2 & -1 \end{bmatrix}$$

6. Find The rank of the matrix by reducing it into echelon form

$$\begin{bmatrix} 0 & 2 & 1 & 1 \\ 3 & 5 & 1 & 2 \\ 5 & -1 & 2 & 2 \\ 2 & 6 & 5 & 3 \\ -1 & 3 & -3 & -1 \end{bmatrix}$$

$$7. \text{ Solve the following: (i) } x+y-z+w=0 \quad (ii) \ 2x-3y-z=3 \quad (iii) \ x+2y-z=1$$

$$x-y+2z-w=0 \quad x+2y-z=4 \quad x+y+2z=9$$

$$3x+y+w=0 \quad 5x-4y-3z=-2 \quad 2x+y-z=2$$

8. Find non singular matrices P and Q such that PAQ is in normal form. Also find their rank

$$A = \begin{bmatrix} 2 & 3 & 4 & 5 \\ -1 & 1 & 0 & 2 \\ 3 & 5 & 6 & 1 \end{bmatrix}$$

$$9. \text{ Find inverse by elementary transformation } \begin{bmatrix} 11 & 2 & 5 \\ 0 & 9 & 2 \\ 3 & -1 & -8 \end{bmatrix}$$

10. Check whether the following vectors are linearly dependent or independent

$$(i) (2,4,6)^T, (3,-2,1)^T, (1,-6,-5)^T$$

$$(ii) (1,2,3), (3,5,0), (1,0,5)$$



2019

Unit 1:

1. What is OS? Explain roll of OS as an Extended Machine.
2. Write short note on Fifth Generation OF OS.
3. Explain Multi-Threaded and multi core chip
4. Using Suitable Diagram explain the structure of disk drive
5. Write a short note on process model
6. Explain dining philosopher's problem.
7. What is OS? Explain its function
8. List and explain the system calls for file management
9. With suitable diagram explain structure of disk drive
10. List various states of processes. Explain with neat diagram.
11. What is race condition? How mutual exclusion handles race condition?
12. Explain SJF algo with example.
13. Write note on MicroKernal system.
14. Explain virtual memory architecture of OS with neat diagram.
15. How to implement Threads in kernal space and in user space?
16. Explain the barriers synchronization method.
17. Explain FCFS with example.
18. Explain Priority scheduling algorithm? Explain with example.

Unit 2:

1. Explain the concept of running multiple programs without memory abstraction.
2. How swapping helps to hold large programs in RAM? Explain
3. Explain clock page replacement algo with example.
4. Explain any five operations OS performed in Files.
5. Explain the Unix V 7 file system
6. List and explain five operations performed on directories.
7. Explain the concept of address space in memory management.
8. Explain purpose of swapping.
9. List and explain different file structure.
10. Explain link list file allocation method for storing files.
11. What are design issues with paging system
12. Explain concept of segmentation
13. Write notes on I nodes an linked list allocation
14. List and explain different file structure.

Unit 3:

1. What are blocked device and character devices? Explain
2. Write short note on memory mapped IO

4. Explain direct memory access using suitable diagram
5. Explain pre-emptible and non pre-emptible resources.
6. List Coffman's four conditions that must hold for resource to be in deadlock.
7. Explain the process of deadlock with one resource type in each.
8. What is RAID? Explain
9. Short note on Soft timers
10. What is deadlock? Explain with example.
11. Explain any way to avoid deadlock.
12. What are goals of IO software?
13. What is interrupt? Explain its type
14. Write note on power management
15. Explain starvation
16. Explain livelock.

Unit 4:

1. Write note on Type 1 and Type 2 hypervisor.
2. Explain advantages of virtualization
3. List and explain five essential characteristics of Cloud.
4. Write note on VM migration
5. What is Master Slave multiprocessor OS?
6. List different Multicomputer Interconnection Technologies. Explain any Two.
7. What is need of virtualization?
8. Explain IO virtualization
9. Explain the working of message passing multicomputer system.
10. Give advantages of cloud computing
11. How to migrate VM quickly?
12. Explain 2*2 multistage switching network
13. Short note on document based middleware.

Unit 5:

1. Explain kernel structure of Linux.
 2. List and explain file system related system calls in linux.
 3. With diagram explain architecture of android OS.
 4. Explain programming layers in modern window OS
 5. Explain booting process of windows OS.
 6. Note on window power management.
 7. List and explain categories of linux utility program.
 8. Explain various process management system calls in Linux.
 9. Booting process of linux
 10. Concept of caching in windows
 11. Explain fundamental concepts of process in windows
 12. Explain memory management in windows.
 13. Short note on synchronization in linux
 14. Explain process of lifecycle in android
- 2017*

How android supports security?



- a) Define the following
 - i) Universal statement
 - ii) Existential statement
 - iii) Subset
 - iv) Cartesian product
 - v) Relation.
- b) Explain Russell's paradox with an example.
- c) Define a predicate & its truth set.
- d) Define prime numbers & composite numbers. Express the definitions using symbols.
- e) State the quotient remainder theorem
- f) State Euclidean algorithm.
- g) Define
 - i) Function
 - ii) Logarithm
 - iii) Logarithmic function
 - iv) Boolean function
 - v) Image & Inverse Image.
- h) Define surjective function & inverse function.
- i) Define graph, digraph, simple graph & subgraph
- j) Explain rooted & binary trees.
- k) Explain
 - i) One-One function
 - ii) onto function
 - iii) Inverse of a function
 - iv) Cardinality
 - v) Composite function.

20/11/20

- Q) Define the following.
- i) Trail
 - ii) Connected graph
 - iii) Spanning Tree
 - iv) Hamiltonian graph
 - v) Hamiltonian Cycle

f) $\Sigma = \dots$

- i) ~~Trail~~ Path
- ii) Circuit
- iii) Walk
- iv) Tree

Q.2 Let $A = \{c, d, f, g\}$, $B = \{f, j\}$, $C = \{d, g\}$
 Answer each of the following questions.
 Give reason for your answers.

- i) IS $B \subseteq A$?
- ii) IS $C \subseteq A$?
- iii) IS $C \subseteq C$?
- iv) IS C a proper subset of A ?

Q.3 : Let $S = \{2, 4, 6\}$ & $T = \{a, 3, 5\}$. Use the set-roster notation to write each of the following sets, & indicate the number of elements that are in each set.

- i) $S \times T$
- ii) $T \times S$
- iii) $S \times S$
- iv) $T \times T$

Q.4 Define $G: R \times R \rightarrow R \times R$ as follow.

$$G(x, y) = y - 2x \text{ for all } (x, y) \in R \times R$$

- i) IS G one-to-one? prove or give a counterexample
- ii) IS G onto? Prove or give a counterexample.

Q.5) Prove that $\sqrt{5}$ is irrational.

Q.6) Prove the following using truth table

- i) $P \rightarrow Q = \neg P \vee Q$
- ii) $P \leftrightarrow Q = (\neg P \wedge \neg Q) \vee (P \wedge Q)$
- iii) $P \wedge (Q \vee R) = (P \wedge Q) \vee (P \wedge R)$

Draw all non-isomorphic graphs with six vertices, all having degree 2.

Q.8 Draw four non-isomorphic graphs with six vertices, two of degree 4 & four of degree 3

Q.9 In the graph below, determine which of the following walks are trails, paths, circuits or simple circuits. Justify your answer

- (i) $v_1 v_2 v_3 v_4 v_5 v_6 v_1$
- (ii) $v_1 v_2 v_3 v_4$
- (iii) $v_2 v_3 v_4 v_5 v_1 v_6 v_2$
- (iv) $v_2 v_3 v_4 v_5 v_6 v_2$
- (v) $v_1 v_2 v_3 v_1 v_2 v_3 v_1$



1. Define digital signal. With respect to digital signal explain the terms – digits and bits. Also discuss active high and active low signal.
2. What are different numbering system used? Convert following numbers to required numbering system.
 - (i) $(11001011.011110)_2 = (?)_{10}$
 - (ii) $(1100110.011010)_2 = (?)_{16}$
3. What are codes? Where are they used? Differentiate between weighted and non-weighted codes. Give one example of each.
4. Explain how negative numbers are represented in binary numbering system. Discuss properties of 2's complement.
5. Perform following arithmetic operations after converting the numbers to binary numbering system -
 - (i) $(10)_{10} \div (4)_{10}$
 - (ii) $(727)_8 - (234)_8$
 - (iii) $(DADA)_{16} + (BABA)_{16}$
6. Add following BCD numbers
 - (i) $(56)_{10}$ and $(23)_{10}$
 - (ii) $(82)_{10}$ and $(34)_{10}$
1. Draw logic circuit and make truth table to prove the following Boolean theorems-
 - i) $A \cdot 0 = 0$
 - iii) $(A \cdot B) \cdot C = A \cdot (B \cdot C)$
2. Using rules of Boolean algebra, solve $y = (x + z) (x' + y + z)$. Draw a logic circuit using suitable gates to implement the simplified equation.
3. What is meant by universal logic gate? Draw logic circuits showing construction of Ex-OR gate using NAND gate and using NOR gate
4. $F(A,B,C,D) = \sum m (0,1,2,5,13,15)$. Draw k-map and find minimized Boolean expression
5. What is meant by don't care conditions? Explain how are they used in simplifying an expression using a k-map. Use the following example-
6. $F(A,B,C,D) = \sum m (1,4,8,12,13,15) + d(3,14)$
7. What are disadvantages of k-map? Explain the Q- M method. Discuss the terms 'prime implicant', 'code word' and 'reduction table'.
1. A 4 bit binary number is represented by $A_3A_2A_1A_0$, where $A_3A_2A_1$ and A_0 represent the individual bits with A_0 equals to the bits with A_0 equal to the LSB. Design a logic circuit that will produce a HIGH output whenever binary number is greater than $(0010)_2$ and less than $(1000)_2$.
2. Convert 4 bit binary to 4 bit gray. Draw the truth table, necessary k-maps and logic circuit.
3. Design a BCD TO 7 segment decoder. Realize the circuit using NAND gates only.
4. Implement 8 bit adder 4 bit full adder.
5. Draw circuit and explain working of BCD subtractor.
6. Write a note on fast multiplier.
1. Implement following function using 8:1 Mux
2. $F(A,B,C,D) = \sum M (2,4,5,7,10,14)$
3. What are data distributor (demultiplexer)? Explain basic operation of 2 output demultiplexer.
4. Draw block dig and explain operation of 74180 monolithic 8 bit checker/ generator.
5. Explain the need of preset and clear pins in RS flip flop? With neat block dig and truth table explain the working of RS flip flop.
6. Write a note on master slave JK flip flop.
7. Discuss various applications of flip flops.
1. Explain the working of Asynchronous / ripple counter.
2. Design mod – 4 regular sequential synchronous up counter using TFF.
3. Write truth table for mod 6 counter in IC 7492.
4. Explain the difference between serial shifting and parallel shifting of data in shift register.
5. Explain how sequence generator circuit works. Explain with one example.
6. Write a note on ring counter.

number system conversions:

~~5393~~10 = (?)2

10101.0012 = (?)10

6FAB716 = (?)10

11101.1012 = (?)8

5623816 = (?)2

1. Convert the following hexadecimal numbers into binary and octal numbers

DA643

EDC8

3245

68912

AF4D

2. Convert the following numbers into binary:

123610

234910

345.27510

45678

45.658

3. Explain Unicode and ASCII code?

4. Write a note on various number system and its usages?

5. Explain Excess-3 Code with table?

6. Exercises

1. 1010 + 1101

2. 1011 + 111

3. 1111 - 1010

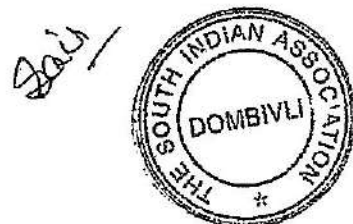
4. 1110 - 101

5. 1101 × 101

6. 1001 ÷ 101

1. Convert the binary number 110110111110101 to hex.

2. Convert the hex number ABC7 to binary.



REMEDIAL QUESTION BANK 2018-19

SEMESTER III

SYBSc IT

- 1) Solve the equation $x^9 + 8x^6 + x^3 + 8 = 0$
- 2) Solve completely the equation $x^{10} + 11x^5 + 10 = 0$
- 3) Find the value of $\tanh \log \sqrt{5}$.
- 4) Discuss the consistency of the system of equations and if consistent solve the equation:
 $x + y + z = 6$; $x + 2y + 3z = 14$; $2x + 4y + 7z = 30$
- 5) Verify Cayley-Hamilton theorem for $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and hence find A^{-1}
- 6) Examine whether the given vectors are linearly independent or dependent:
 $[1, 1, -1]$; $[2, 3, -5]$; $[2, -1, 4]$
- 7) If $A = \begin{bmatrix} -1 & -2 & -2 \\ 2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$ Find inverse by adjoint method
- 8) Express the given matrix as sum of symmetric and skew-symmetric matrices
 where $A = \begin{bmatrix} 2 & -3 & 6 \\ -4 & 1 & 0 \\ -7 & 6 & 2 \end{bmatrix}$.
- 9) Verify Cayley-Hamilton theorem for $A = \begin{bmatrix} 5 & 3 \\ 1 & 3 \end{bmatrix}$ and hence find the matrix
 $A^6 - 7A^5 + 4A^4 + 12A^3 + A^2 + A + I$ in terms of A .
- 10) Find the Eigen values of $A = \begin{bmatrix} 2 & -2 & 3 \\ 1 & 1 & 1 \\ 1 & 3 & -1 \end{bmatrix}$.
- 11) Verify the given matrix is orthogonal .If so find A^{-1} where $A = \begin{bmatrix} \cos \theta & -\sin \theta & 0 \\ \sin \theta & \cos \theta & 0 \\ 0 & 0 & 1 \end{bmatrix}$
- 12) Solve the system of equations $2x - y + 3z = 0$, $3x + 2y + z = 0$, $x - 4y + 5z = 0$
- 13) Find Eigen values and Eigen vectors of $A = \begin{bmatrix} 2 & 1 & 0 \\ 0 & 2 & 1 \\ 0 & 0 & 2 \end{bmatrix}$
- 14) Verify Cayley- Hamilton theorem for $A = \begin{bmatrix} 0 & 1 & 2 \\ 3 & -3 & 2 \\ 1 & 1 & -1 \end{bmatrix}$
- 15) Solve the exact D.E $(y^2 - x^2) dx + 2xy dy = 0$
- 16) Solve $\frac{dy}{dx} = e^{x-y} + x^2 e^{-y}$
- 17) Solve $x(x-y) dy + y^2 dx = 0$
- 18) Solve $(D^2 + D - 2) y = 0$
- 19) Solve $(D^3 - 6D^2 + 12D - 8)y = 0$

20) Solve $(D^2 + D - 6)y = e^{2x}$

21) Solve $(D^2 + D + 1)y = e^{3x} + 6e^x + 5$

22) Solve $(4x^3y^3 - 2xy) dx + (3x^4y^2 - x^2) dy = 0$

23) Solve $\frac{dy}{dx} + \frac{4x}{x^2+1} y = \frac{1}{(x^2+1)^3}$

24) Solve $(D^2 - D + 1)y = \cos 2x$

25) Find Inverse Laplace transform using partial fraction method $\frac{5s-2}{(s+3)(s-2)}$

26) Find Laplace transform of (a) $\frac{\cosh 2t \sin 2t}{t}$ (b) $te^{3t} \sin t$

27) Find inverse Laplace transform by partial fraction method $\frac{s^2+1}{(s^3+3s^2+2s)}$

28) Solve differential equation with given initial conditions

$\frac{d^2y}{dx^2} + 16y = 10 \cos 4t$ with $y(0)=3, y'(0) = 4$

29)

30) Find Laplace transform of the periodic function $f(t) = e^t, 0 < t < 2\pi$

31) Find $L \{ \sin 2t \cos t \cosh 2t \}$

32) Solve $\frac{dy}{dt} + 4y = 1, y(0) = 2$

33) Prove $\beta(m+1, n) = \frac{m}{m+n} \beta(m, n)$.

34) Prove that $\text{erf}(x) + \text{erfc}(x) = 1$

35) Prove that $\text{erf}(\infty) = 1$

36) Prove that $\int_0^\infty \frac{e^{-ax} \sin x}{x} dx = \cot^{-1} a$

37) Evaluate $\int_0^\infty \frac{x^4}{4^x} dx$



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THE SIA COLLEGE OF HIGHER EDUCATION
REMEDIAL LECTURES
ACADEMIC YEAR 2018-19
SEMESTER 3 SUBJECT PYTHON PROGRAMMING

	Answer the following Questions
1.	What is python? List and exp
2	Python programs are executed by an interpreter. There are two ways to use the interpreter. What are they?
3	When more than one operator appears in an expression, the order of evaluation depends on the rules of precedence. The acronym is an useful way to remember the rules. Explain the same with a Python expression.
4	Explain for loop in Python with an example code to print Fibonacci series up to 10 terms.
5	Write a Python program to list all the factorial numbers less than or equal to an input number n. A number N is called a factorial number if it is the factorial of a positive integer. For example, the first few factorial numbers are 1, 2, 6, 24, 120, ...
6	Explain any methods under strings in Python with suitable examples
7	Write a function is reverse(string1, string2) to return true if string1 is reverse of string2
8	Write a Python code to check whether the given number is a strong number. Strong Numbers are numbers whose sum of factorial of digits is equal to the original number (Example: $145 = 1! + 4! + 5!$).
9	What is meant by Variable-length argument tuples? Explain with an example. Explain any methods associated with files in Python.
10	List and explain any five exceptions in Python
11	What is the significant difference between list and dictionary?
12	Explain lass inheritance in Python with an example
13	Name and explain the magic methods of Python that are used in the initialization and deletion of class objects with the help of a code snippet
14	Create a module armprime that has two functions, one to check whether the given number is an Armstrong number and the other to check whether the given number is a prime number. Import the above created module in a .py file and show the use of the two functions.
15	Explain the Scrolled text widget in Python.
16	Write a Python code to do <ul style="list-style-type: none"> i) Create a table EMPLOYEE with columns Id (integer, not null, primary key), AdhaarNo (integer, not null), Empname (not null, varchar), Empdept (not null, varchar) and Empage (not null, integer) in MySQL and insert 5 rows of data. ii) Update the respective rows to Empdept = 'ERP' where Empage is ≥ 40.

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THE SIA COLLEGE OF HIGHER EDUCATION
REMEDIAL LECTURES
ACADEMIC YEAR 2018-19
SEMESTER 3 SUBJECT PYTHON PROGRAMMING

17	What is python? Explain its features
18	Brief on type conversion in python
19	Explain if..else and break statement.
20	How is a function? How to create a recursive function.
21	Explain the various string functions in python.
22	What is a list? How to create a list with example.
23	Explain the features of dictionary
24	What is a regular expression? Explain the various patterns of regular expression
25	Explain method overriding with an example.
26	Explain the various functions of math module.
27	Explain check button widget with the example
28	What is layout management? Explain grid manager.
29	Write notes on cursor object in python.
30	Write in explain the steps to insert a row into a mysql database with example.



Questions for DBMS from Unit 1 to 5

SEM-III

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1. What is the role of a DBMS, and what are its advantages? What are its disadvantages?
2. Explain Storage system and query processor components of database structure.
3. What is a business rule, and what is its purpose in data modeling?
4. Give comparison between hierarchical, network & relational model.
5. List and explain Codd's rule in detail.
6. Explain ER diagram and its components. Give the distinction between disjoint, overlapping, total and partial constraints. Draw E-R diagram for the following situations that correctly models this domain and its constraints.

A small racing league want a database to keep track of teams, drivers, races and scores in the league. The league is run for teams, which are identified by their names. Each team has one or more drivers signed up, and each driver is registered with the league and has a unique league licence number. First and last names of the drivers should also be included. A driver may only participate for a single team throughout the season. Races are identified simply by the dates when they are run. For each race, the league also wants to store the venue where it took place. Drivers participate in races, and for each participating driver the database should store the total race time for that driver, and the league score they got from that race.

7. Why are entity integrity and referential integrity important in a database? Explain in detail.
8. Explain why normalization is necessary in database system & also explain database anomalies in detail.

You are given the following set of functional dependencies for a relation $R(A,B,C,D,E,F)$,

$$F = \{AB \rightarrow C, DC \rightarrow AE, E \rightarrow F\}$$

- a. What are the keys of this relation?
 - b. Is this relation in BCNF? If not, explain why by showing one violation.
 - c. Is the decomposition $(A, B, C, D) (B, C, D, E, F)$ a dependency preserving decomposition? If not, explain briefly.
9. Write short note on Cartesian product with its syntax and example.
 10. Explain SET operators in details along with example.
 11. Explain formal definitions with safety of expressions of tuples relational calculus.
 - 12 State the difference between Relational algebra and calculus.
 - 13 What are constraints? What are the different types of constraints? Explain.
 - 14 When can a view be updated? Explain the syntax of updating a view. And also state the difference between views and table.
 15. Consider the relations :

Worker
(WORKER_ID, FIRST_NAME, LAST_NAME, SALARY, JOINING_DATE, DEPARTMENT)

Write the SQL queries for the following:

1. Write An SQL Query To Print The FIRST_NAME And LAST_NAME From Worker Table Into A Single Column COMPLETE_NAME. A Space Char Should Separate Them.

- 2. Write An SQL Query That Fetches The Unique Values Of DEPARTMENT From Worker Table And Prints Its Length.
- 3. Write An SQL Query To Print First Three Characters Of FIRST_NAME From Worker Table.
- 4. Write An SQL Query To Fetch Worker Names With Salaries >= 50000 And <= 100000.
 - 1. Write An SQL Query To Fetch The No. Of Workers for Each Department in the Descending Order.
- 16. Write in brief about SQL with its advantages and also explain NULL value concept. How NULL values are different from EMPTY values.
- 17. Define Join and List its type and explain any two in details. Consider the following relation and solve the below query:
- 18.

Sample table: departments

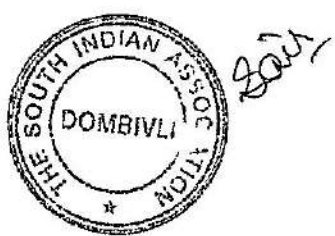
(DEPARTMENT_ID,DEPARTMENT_NAME ,MANAGER_ID , LOCATION_ID)

Sample table: employees

(EMPLOYEE_ID , FIRST_NAME , LAST_NAME , EMAIL , PHONE_NUMBER ,HIRE_DATE , JOB_ID , SALARY , COMMISSION_PCT , MANAGER_ID , DEPARTMENT_ID)

Write a query in SQL to display the first name, last name, department number, and department name for each employee.

- 18. Differentiate between ANY and ALL operators with example & also explain hierarchical query.
- 19. List the ACID properties. Explain the usefulness of each.
- 20. Explain the concept of serializability and explain in detail view serializability.
- 21. What are concurrent transaction? Explain in details the main features of concurrent execution.
- 22. What are some disadvantages of time stamping methods for concurrency control? And also explain timestamp ordering protocol in detail.
- 23. What benefit does rigorous two-phase locking provide? How does it compare with other forms of two-phase locking?
- 24. If deadlock is avoided by deadlock-avoidance schemes, is starvation still possible? Explain your answer.
- 25. What is the use of % TYPE attributes and how it is beneficial while declaring the variable?
- 26. Illustrate the attributes of Implicit cursor with examples.
- 27. Explain the function Raise_Application_Error () with example.
- 28. List & explain the various features of PL/SQL & also differentiate between Anonymous blocks and Subprograms.
- 29. What are packages in PL/SQL? List and explain the various advantages of Packages. Create a package to display the employee name and salary.
- 30. What are triggers? Explain the syntax for creating a trigger in PL/SQL. List the benefits of creating trigger in PL/SQL.

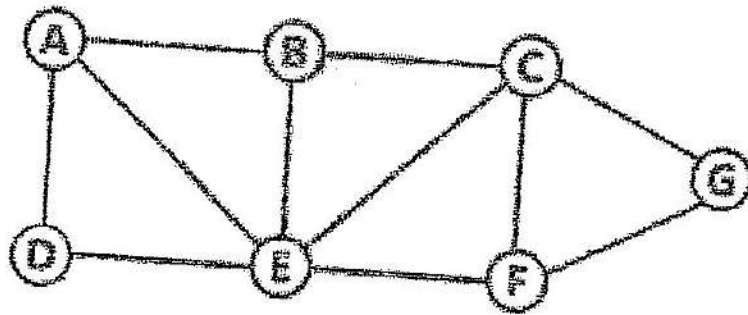


Data Structure : Question Bank for Remedial Lectures

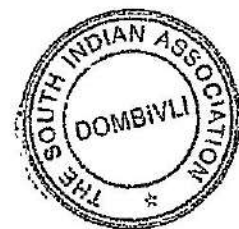
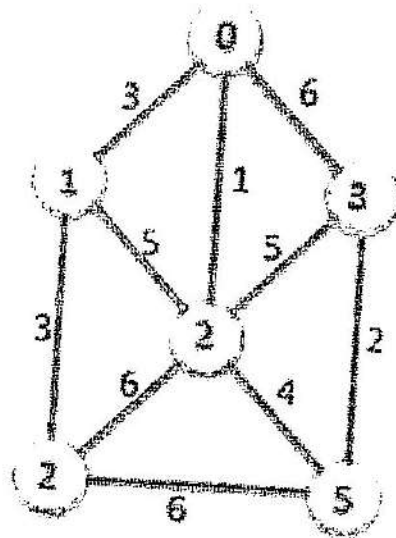
Academic year 2018-2019 - 54 B Sc. - IT Semester - III

1. What is data structure? Explain the categories in which data structure can be divided.
2. What is an algorithm? What are the characteristics of an algorithm?
3. What is meant by complexity of an algorithm? Explain different types of complexities.
4. Write an algorithm to insert an element into the array and to delete an element from the array.
5. What is bubble sort? Sort the following data items using bubble sort method. 14, 33, 27, 35, 10. What are the advantages and limitations of an array?
6. What is linked list? Write and explain an algorithm to insert an element at the beginning of the singly linked list.
7. Write and explain an algorithm to split a link list into two linked lists.
8. What is circular linked list? How to traverse a circular linked list?
9. What is the need of two way linked lists? Explain the structure of a node in a two way linked list.
10. Write a short note on header linked list.
11. Explain how to represent a sparse array using an array and a linked list with an example.
12. Define stack. Discuss the basic operations performed on the stack. Also explain overflow and underflow conditions of the stack.
13. Write an algorithm to implement the stack operations using an array.
14. Convert the following expressions in postfix and prefix notations. (i) $(x-y) \times ((z+v)/f)$ (ii) $(x*y) + (z + ((a+b-c)*d)) - I * (j/k)$
15. Define queue. How queue is represented in memory using linked list?
16. Write a short note on double ended priority queue.
17. Write an algorithm to insert and delete a node from a circular queue.
18. Reconstruct the binary tree whose in-order and pre-order traversals are: In-order Traversal : g d b h e i a f c Pre-order Traversal: a b d g e h i c f
19. What is binary search tree? Write an algorithm to find the position of a given element 'Item' and its parent in a binary search tree.
20. Sort the following data elements using heap sort algorithm. 22, 35, 17, 8, 13, 44, 5, 28
21. What is AVL tree? How balancing is done in AVL tree? Explain with example.
22. What are 2-3 trees? How to delete a key value from 2-3 trees?
23. What are the algorithmic steps of insertion sort method? Sort the following data elements using insertion sort method. 7, 8, 5, 2, 4, 6, 3

24. What is hashing? Explain mid square method and division remainder method of calculating address
25. Describe the following collision resolution techniques.
 (I) Linear probing (II) Chaining
26. Define the following terms.
 1. Graph
 2. Outdegree and Indegree
 3. Source and sink
 4. Path
 5. Strongly connected graph
27. Traverse the following graph using Depth First Search traversal technique. Start traversing from the source vertex 'A'



28. Explain Warshall's algorithm of finding path matrix of a graph. Find the minimum spanning tree for the following graph using Prim's algorithm and the source vertex 'S'.





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BCOM Question Bank

Question bank FYBCom
Sub: Economics

Module 1:

1. Explain the meaning, scope and importance of business economics.
2. Explain the concepts: incremental concept, marginal concept, and opportunity cost concept.
3. Discuss the concept of variables, functions, equations, and graphs using an example. (demand function, equation, and graph)
4. Explain the relation between TR, MR and AR.
5. Explain how equilibrium price is determined in the market.
6. Calculate TR, MR, and

AR

Price	Quantity	Total Revenue (P×Q)	Average Revenue (TR/Q)	Marginal Revenue (dTR/dQ)
5		400		
10		750		
15		1020		
20		1240		
25		1375		
30		1410		
35		1400		
40		1280		

7. Calculate TC, AC, and MC

Quantity	FC	VC	TC	AC	MC
0	70	-			
1	70	50			
2	70	65			
3	70	75			
4	70	90			
5	70	120			
6	70	170			
7	70	200			

Module 2:

1. Explain the meaning, assumptions, explanation, and exceptions of the law of demand.
2. Write a note on the determinants of demand.
3. Explain the nature of demand curve under different market structures.
4. Explain price elasticity of demand.
5. Explain income elasticity of demand.
6. Explain cross elasticity of demand.

7. Explain promotional elasticity of demand.
8. Write a note on the methods of measuring price elasticity of demand.
9. What is the meaning and importance of demand forecasting?
10. Write a note on the steps of demand forecasting.
11. Explain survey methods of demand forecasting.
12. Explain statistical methods of demand forecasting.
13. Given following demand function $Q_d = 200 - 0.32P$, what is your forecast for Q_d when $P = 10, 20,$ and 30 ?
14. Given following demand function $Q_d = 60 - 0.7P$, if future price is $P = \text{Rs. } 20$, what is the forecast for quantity demanded?
15. Given following demand function $Q_d = 200 - 0.45P$, what is your forecast for Q_d when $P = 10, 50, 60$?

Module 3:

1. Explain the law of variable proportions.
2. Explain the law of returns to scale.
3. Write a note on the meaning and properties of isoquants.
4. Explain the concept of iso-cost line.
5. Discuss the concept of ridge lines.
6. How does a firm attain least cost combination of inputs?
7. Elaborate on the economies of scale.
8. Elaborate on the diseconomies of scale.
9. Explain the meaning and types of production function.

Module 4:

1. Explain any four cost concepts.
2. Discuss the break-even analysis using an example.
3. The LAC is also called an envelope curve. Justify the statement.
4. Explain the concept of learning curve.
5. Explain the relationship of average cost curves in the short-run.
6. Explain the concept of TC, TFC, and TVC using schedule and diagram.

Question bank SYBCom Sub: Economics

Module 1:

1. What is the meaning, scope, and importance of macroeconomics?
2. Why is the study of circular flow of income important?
3. Write a note on Say's law of markets.
4. Explain circular flow of income in a two-sector, three-sector, and four-sector economy.
5. Write a note on the meaning and importance of national income accounting.
6. Write a note on the concepts of national income.
7. What are the different methods of measuring national income?
8. Explain the meaning, features, and phases of trade cycles.
9. Write short note on: a) Green National Income Accounting
b) Relation between NI and Economic Welfare

Module 2:

1. Explain the concept of effective demand given by Keynes. / explain the concept of aggregate demand function and aggregate supply function.
2. Write a note on the Keynesian consumption function.
3. What is the meaning of investment? Explain the types of investment and investment function.
4. Explain the concept of marginal efficiency of capital.
5. Write a note on the concept of multiplier.
6. Explain Keynes' psychological law of consumption and factors affecting marginal propensity to consume.
7. Write a short note on the paradox of thrift.
8. Explain the concept of APC, MPC, APS, MPS / write a note on the technical attributes of consumption and saving function.

Module 3:

1. Explain the IS curve and shift in IS curve.
2. Explain the LM curve and shift in LM curve.
3. Explain IS-LM equilibrium determination.
4. Explain the impact of monetary and fiscal policies on IS-LM model.
5. Write a note on Phillips curve.
6. Explain the long-run Phillips curve.
7. What do you mean by Stagflation? What are the causes of stagflation?
8. Write a note on the propositions of supply-side economics.

Module 4:

1. Write a note on the meaning and measures of money supply in India.
2. Write a note on the components, determinants and factors affecting money supply in India.
3. Write short note on : Velocity of circulation of money (with factors)
4. Explain Fisher's approach to demand for money.
5. Explain Cambridge approach to demand for money.
6. Explain Keynesian approach to demand for money.
7. Explain Friedman approach to demand for money.
8. Explain the concept of liquidity trap.
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Question bank TYBCom
Sub: Economics

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S.Y.B.COM SEM III

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4. What is microcomputer? What are the reasons for its popularity? What are the types of microcomputer?
- 5.explain in brief about tablet computer and smartphones.
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7. Explain in brief the functional units of computer.
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- Q.Explain basic structure of C program
- Q. Write note on keywords.
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Q. Give output questions

Q. Program on above

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Q. Write short note on

1. if() 2. Break; 3. Continue; 4. Switch()

5. for() 6. While() 7.do..while()

Q. program on conditional statements

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BCOM Question Bank

Question bank FYBCom
Sub: Economics

Module 1:

1. Explain the meaning, scope and importance of business economics.
2. Explain the concepts: incremental concept, marginal concept, and opportunity cost concept.
3. Discuss the concept of variables, functions, equations, and graphs using an example. (demand function, equation, and graph)
4. Explain the relation between TR, MR and AR.
5. Explain how equilibrium price is determined in the market.
6. Calculate TR, MR, and

AR

Price	Quantity	Total Revenue (P×Q)	Average Revenue (TR/Q)	Marginal Revenue (dTR/dQ)
5		400		
10		750		
15		1020		
20		1240		
25		1375		
30		1410		
35		1400		
40		1280		

7. Calculate TC, AC, and MC

Quantity	FC	VC	TC	AC	MC
0	70	-			
1	70	50			
2	70	65			
3	70	75			
4	70	90			
5	70	120			
6	70	170			
7	70	200			

Module 2:

1. Explain the meaning, assumptions, explanation, and exceptions of the law of demand.
2. Write a note on the determinants of demand.
3. Explain the nature of demand curve under different market structures.
4. Explain price elasticity of demand.
5. Explain income elasticity of demand.
6. Explain cross elasticity of demand.

7. Explain promotional elasticity of demand.
8. Write a note on the methods of measuring price elasticity of demand.
9. What is the meaning and importance of demand forecasting?
10. Write a note on the steps of demand forecasting.
11. Explain survey methods of demand forecasting.
12. Explain statistical methods of demand forecasting.
13. Given following demand function $Q_d = 200 - 0.32P$, what is your forecast for Q_d when $P = 10, 20,$ and 30 ?
14. Given following demand function $Q_d = 60 - 0.7P$, if future price is $P = \text{Rs. } 20$, what is the forecast for quantity demanded?
15. Given following demand function $Q_d = 200 - 0.45P$, what is your forecast for Q_d when $P = 10, 50, 60$?

Module 3:

1. Explain the law of variable proportions.
2. Explain the law of returns to scale.
3. Write a note on the meaning and properties of isoquants.
4. Explain the concept of iso-cost line.
5. Discuss the concept of ridge lines.
6. How does a firm attain least cost combination of inputs?
7. Elaborate on the economies of scale.
8. Elaborate on the diseconomies of scale.
9. Explain the meaning and types of production function.

Module 4:

1. Explain any four cost concepts.
2. Discuss the break-even analysis using an example.
3. The LAC is also called an envelope curve. Justify the statement.
4. Explain the concept of learning curve.
5. Explain the relationship of average cost curves in the short-run.
6. Explain the concept of TC, TFC, and TVC using schedule and diagram.

Question bank SYBCom Sub: Economics

Module 1:

1. What is the meaning, scope, and importance of macroeconomics?
2. Why is the study of circular flow of income important?
3. Write a note on Say's law of markets.
4. Explain circular flow of income in a two-sector, three-sector, and four-sector economy.
5. Write a note on the meaning and importance of national income accounting.
6. Write a note on the concepts of national income.
7. What are the different the methods of measuring national income?
8. Explain the meaning, features, and phases of trade cycles.
9. Write short note on: a) Green National Income Accounting
b) Relation between NI and Economic Welfare

Module 2:

1. Explain the concept of effective demand given by Keynes. / explain the concept of aggregate demand function and aggregate supply function.
2. Write a note on the Keynesian consumption function.
3. What is the meaning of investment? Explain the types of investment and investment function.
4. Explain the concept of marginal efficiency of capital.
5. Write a note on the concept of multiplier.
6. Explain Keynes' psychological law of consumption and factors affecting marginal propensity to consume.
7. Write a short note on the paradox of thrift.
8. Explain the concept of APC, MPC, APS, MPS / write a note on the technical attributes of consumption and saving function.

Module 3:

1. Explain the IS curve and shift in IS curve.
2. Explain the LM curve and shift in LM curve.
3. Explain IS-LM equilibrium determination.
4. Explain the impact of monetary and fiscal policies on IS-LM model.
5. Write a note on Phillips curve.
6. Explain the long-run Phillips curve.
7. What do you mean by Stagflation? What are the causes of stagflation?
8. Write a note on the propositions of supply-side economics.

Module 4:

1. Write a note on the meaning and measures of money supply in India.
2. Write a note on the components, determinants and factors affecting money supply in India.
3. Write short note on : Velocity of circulation of money (with factors)
4. Explain Fisher's approach to demand for money.
5. Explain Cambridge approach to demand for money.
6. Explain Keynesian approach to demand for money.
7. Explain Friedman approach to demand for money.
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