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Reg. No:.........................

Name: ....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fourth Semester BVOC SD Degree Examination, April 2023
SDC4IT17 – Operating Systems
(2020 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

PART – A
Answer *all* questions.
Each question carries Two marks.
Ceiling -25 Marks

1. Define an operating system.

2. Write any two advantages of LINUX OS.

3. What do you mean by process synchronization?

4. Give short account of dynamic linking.

5. What is the use of TLB?

6. What are the file accessing methods?

7. What is meant by page fragmentation?

8. Differentiate between logical and physical addressing with examples?

9. How is memory management in batch OS?

10. Write the names of windows and Linux file systems.

11. Explain multi-tasking os.

12. What are concepts of PCB?

13. List classic synchronization problems.

14. Write the advantages of using virtual memory.

15. What do you mean by mutual exclusion condition for deadlock?

PART – B
Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16. Explain the scheduling criteria in detail.

17. Explain free space management.

18. Explain various page replacement algorithms.

19. Compare and contrast time sharing and multiprogramming os.

20. List and explain different methods for file allocation.

21. Explain UNIX os with features.

22. Write about distributed OS.

23. What is a process? Explain its different states.

PART - C
Answer any *two* questions.
Each question carries Ten marks.

24. Why operating system is knows as a resource manager? List and explain important functions of an operating system.

25. What do you mean by file system? What are its functions? With a diagram explain file system hierarchy ?

26. Explain the concept and implementation of virtual memory.

27. Apply SJF and FCFS scheduling and find average waiting time and turnaround time for executing the following processes.

PROCESS	BURST TIME	ARRIVAL TIME
P1	5	0
P2	2	1
P3	1	2
P4	1	3
P5	4	4

2 x 10 = 20 Marks

(Pages : 2)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fourth Semester BVOC SD Degree Examination, April 2023
SDC4IT18 – Computer Security
(2020 Admission onwards)

Time: 2 hours

Max. Marks: 60

PART – A
Answer *all* questions.
Each question carries Two mark.
Ceiling -20 Marks

1. Define Malware.

2. What is access control matrix?

3. Define Sniffing.

4. What is passive and active attack?

5. What is a firewall?

6. What is two-factor authentication?

7. What is Brute Force Attack?

8. Why computer security is important?

9. What is meant by Security Patch?

10. Define Digital Signature.

11. What is End-To-End Encryption?

12. What is web and electronic commerce?

PART – B
Answer *all* questions.
Each question carries Five marks.
Ceiling -30 Marks

13. What is SSL and how does it enhance web and electronic commerce security?

14. What is two-factor authentication and how does it improve electronic commerce security?

15. What are some common database security vulnerabilities and how can they be addressed?

16. What are some best practices for ensuring secure electronic commerce transactions?

17. What are the major threats to computer security and how can they be prevented?

18. Differentiate between symmetric and asymmetric key cryptography.

19. What is a digital certificate? How it is used for authentication?

PART - C
Answer any *ONE* questions.
Question carries Ten marks.

20. Discuss the different types of access control matrix models. Explain the different types of user authentication mechanism.

21. Explain the history of cryptography and its evolution to modern encryption techniques.

1 x 10 = 10 Marks

(Pages : 2)

Reg. No:...........................

Name: ....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fourth Semester BVOC SD Degree Examination, April 2023
SDC4IT19 – Dot Net Programming
(2020 Admission onwards)

Time: 2 hours

Max. Marks: 60

PART – A
Answer *all* questions.
Each question carries Two mark.
Ceiling -20 Marks

1. What is .NET Framework?

2. Define namespace in DOT NET Programming.

3. What are the parameters in ADO.NET?

4. Mention the properties of Textbox control.

5. What is a web service in DOT NET programming?

6. Define thread in .NET.

7. What is an HTTP handler in ASP.NET?

8. What is an object class in .NET?

9. What is constructor overloading?

10. Mention the role of JIT compiler in DOT NET.

11. What is a master page in ASP.NET?

12. Mention the difference between .NET core and .NET Framework.

PART – B
Answer *all* questions.
Each question carries Five marks.
Ceiling -30 Marks

13. What is the difference between the Dispose () method and the Finalize () method in .NET?

14. Explain the concept of .NET assemblies. How do they work? Discuss their benefits and drawbacks.

15. What are delegates in .NET programming? Explain their purpose and how they are used to achieve loose coupling between components.

16. What are the uses of validation controls? Explain how they can be used to validate from input controls.

17. Describe the different types of .NET applications that can be developed using .NET Framework. Explain their features and use cases.

18. Discuss the role of the Common Language Runtime (CLR) in .NET development. Explain its features.

19. Describe the debugging and error handling techniques used in .NET programming.

PART - C
Answer any ONE questions.
question carries Ten marks.

20. Explain the architecture and components of .NET framework.

21. Explain the concepts of object-oriented programming in .NET. Discuss the principles of inheritance, polymorphism, and encapsulation.

1 x 10 = 10 Mark

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(Pages : 2)

Reg. No:..........................

Name: ....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester BVOC AUTO/BVOC SD Degree Examination, April 2023

A13 – Entrepreneurship Development

(2020 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

PART – A
Answer *all* questions.
Each question carries Two mark.
Ceiling -25 Marks

1. Define innovation.

2. What do you mean by industrial estate?

3. What purpose do the business incubators serve?

4. Specify any two objectives of SIDCO.

5. Depict the primary goal of ED clubs.

6. Sketch any two causes of industrial sickness.

7. Draft a note on export oriented unit.

8. Compare bridge capital and seed capital.

9. For what purpose the environmental impact assessment was carried out?

10. Who is a technical entrepreneur?

11. Point out any two functions of techno parks.

12. Describe about Ugdyog Aadhar Memorandum.

13. What do you mean by environmental impact assessment?

14. Define ancillary unit.

15. What is functional industrial estate?

PART – B
Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16. Elucidate the problems faced by women entrepreneurs.

17. Differentiate entrepreneur and manager.

18. Describe the functions of SIDBI.

19. Suggest the ideas to inhibit the entrepreneurial attitude among college students.

20. Elaborate the factors boosting the growth of an entrepreneur.

21. Prepare a note on incentives and subsidies available for entrepreneurs in India.

22. Brief the phases of Project management.

23. Classify Business incubators on the basis of sponsorship.

24. Enumerate the functions of NSIC?

PART - C
Answer any *two* questions.
Each question carries Ten marks.

25. Discuss in detail the qualities and traits of an entrepreneur.

26. Classify entrepreneurs on the basis of types of business.

27. What you mean by feasibility study? How will you evaluate technical feasibility?

28. Write a detailed essay about the salient features MSME ACT 2006.

(2 x 10 = 20 Marks

(Pages : 2)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester BVOC AUTO/BVOC SD Degree Examination, April 2023

A14 – Public Health, Sanitation & Safety

(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

PART – A
Answer *all* questions.
Each question carries Two mark.
Ceiling -25 Marks

1. What is the Quality of Life Index, and how is it calculated?

2. What is Tuberculosis? What are some control measures for Tuberculosis in India?

3. Name two waterborne and airborne diseases.

4. What is contamination? What are the most common sources of contamination?

5. What is food poisoning?

6. Name Four health programs implemented in India,

7. What is night soil, and how is it disposed of?

8. What is disinfection, and why is it important for wastewater treatment and water purification?

9. What is the difference between contamination and pollution?

10. What are some common symptoms of foodborne infections?

11. What is the role of pre-treatment in wastewater handling?

12. What are the purification methods prescribed for water ?

13. Describe the importance of First Aid in the workplace.

14. Expand PPE and its importance.

15. How can foodborne infections and intoxications be prevented?

PART – B
Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16. What are the national programs for the elimination of diseases in India. Name any five?

17. Define health. What is the Health Situation in India?

18. What is microbial growth inhibition?

19. What are Microbial growth pattern and factors affecting microbial proliferation?

20. What are the different methods for Sewage disposal. Write two challenges associated with sewage disposal?

21. Write on safe use of machines and tools.

22. Define concept of Personal Protective Equipment (PPE), and describe how it can be used to protect workers from various types of workplace hazards.

23. What are some basic food safety practices that can help prevent foodborne infections and ntoxications?

PART - C
Answer any *two* questions.
Each question carries Ten marks.

24. Write on the control measures in operation for tuberculosis, poliomyelitis, leprosy, filariasis, and in India.

25. Describe the Symptoms and effect of food poisoning?

26. Explain waste management: Solid and water.

27. Describe the different types of biological hazards that can be present in the Workplace, and discuss the measures that can be taken to protect workers fromexposure to these hazards.

2 x 10 = 20 Marks

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Reg. No:............................

Name: ....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester BVOC AUTO Degree Examination, April 2023

SDC4AU17 – Electronic Engine Management System

(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

PART – A
Answer *all* questions.
Each question carries Two marks.
Ceiling -25 Marks

1   Classify Fuel based on occurrence.

2   What is Volatility?

3   What are the main constituents of fuel supply systems?

4   Explain the basic understanding of the feedback carburetor.

5   Explain Air meter.

6   Name the actuators, which receive signals from ECU in the Bosch Motronic system.

7   Explain how TEL affects the life of a Catalytic converter.

8   Name different types of primary fuel filter in diesel engine, draw any one of it.

9   Where do we locate the secondary fuel filter in diesel engines?

10   Briefly explain heavy duty Air cleaner.

11   Write a note on Bosch 3rd generation CRS.

12   Classify conventional ignition systems.

13   Name the different components of a contact breaker?

14   Where is the distributor located on the engine?

15   Classify Solid state ignition systems.

PART – B
Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16   Explain the properties of Petrol.

17   Draw and Explain SU Electrical Pump.

18   Explain Homogeneous lean burn mode and Combined Homogeneous stratified charge mode.

19   Calculate the pulse width when the engine is working at 4000 rpm and load 2, coolant temperature at 30 °C and oxygen level is 4.

20   Explain Common rail fuel injection with a neat diagram.

21   What are the functions of ECU in CRDI?

22   Draw a diagram showing the rotating magnet type of magneto and discuss its working.

23   Explain the Lucas CRS.

PART - C
Answer any *two* questions.
Each question carries Ten marks.

24   Compare the process of Combustion and Detonation in SI and CI Engine

25   Classify fuel injection according to the number of injector and control methods.

26   What are the common symptoms of fuel system malfunction and possible faults.?

27   Give a detailed account on the battery ignition system. Illustrate your answer with neat sketches.

2 x 10 = 20 Marks

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Reg. No:.............................

Name: ....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fourth Semester BVOC AUTO Degree Examination, April 2023
SDC4AU18 – Digital Fundamentals
(2021 Admission onwards)

Time: 2 hours

Max. Marks: 60

PART – A
Answer *all* questions.
Each question carries Two mark.
Ceiling -20 Marks

1. What is Binary Number System? Give examples.

2. Convert following Binary Numbers to its decimal equivalents.

   a. 11011   b. 101101.101

3. Explain BCD code. Give examples.

4. Explain POS form.

5. Solve A (A+B)

6. Draw the symbol of Ex-NOR gate and its truth table.

7. What is Multiplexer?

8. What is D-flip flop? Draw it's symbol.

9. Explain parallel in parallel out register.

10. What is Ripple counter?

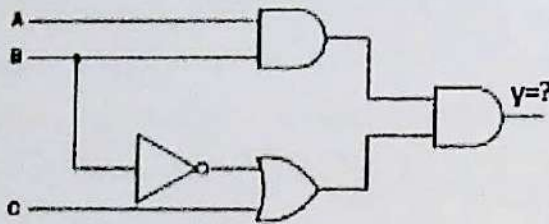11. What is RAM?

12. What is PAL?

PART – B
Answer *all* questions.
Each question carries Five marks.
Ceiling -30 Marks

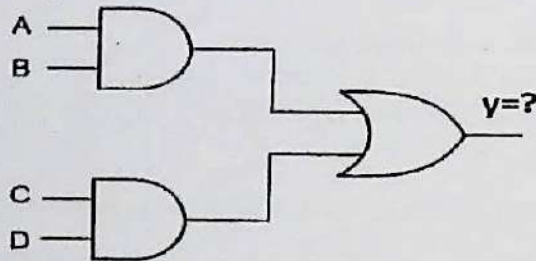13. Convert the following binary numbers in to Gray code.

   a. 1001101   b. 110010   c. 10111011

14. Write the output equation for the following

   a)

   b)

15. Minimize the expression using K-map.

   $\bar{A}\bar{B}CD + \bar{A}BCD + \bar{A}BC\bar{D} + ABCD + ABC\bar{D} + AB\bar{C}D + A\bar{B}\bar{C}D$

16. Explain half adder with neat diagram.

17. Explain RS Flip Flop.

18. Compare Synchronous and Asynchronous counters.

19. Compare between Static and Dynamic RAM cells.

PART - C
Answer any *One* questions.
Each question carries Ten marks.

20. Briefly explain about full subtractor with neat diagram

21. What is shift register? Explain its 4 modes.

1 x 10 = 10 Marks

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(Pages : 2)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fourth Semester BVOC AUTO Degree Examination, April 2023
SDC4AU19 – Microprocessors & Microcontrollers
(2021 Admission onwards)

Time: 2 hours

Max. Marks: 60

PART – A
Answer *all* questions.
Each question carries Two mark.
Ceiling - 20 Marks

1. Define microprocessor.

2. What is an instruction cycle?

3. Write an assembly language program to add two, 8 bit numbers stored at address 2050 and address 2051.

4. Write an ALP to find largest number in an array.

5. Define stack pointer.

6. What is SIM?

7. What are the classifications of memory?

8. What are the advantages of memory mapped I/O?

9. What is 8279?

10. Define PIC processor.

11. Define serial port programming.

12. Define timer.

PART – B
Answer *all* questions.
Each question carries Five marks.
Ceiling - 30 Marks

13. Draw the timing diagram of Opcode fetch cycle.

14. Write the ALP program for the following function. Load the accumulator with 93H and register C with B7H. Add both register. Also check the status of each flag.

15. How the instruction sets can be classified and explain each set with examples? Also explain the function of each instruction.

16. Define interrupts. Explain the classifications of interrupts.

17. Draw and explain the pin diagram of DMA controller 8257.

18. Explain special function registers of 8051.

19. Explain instruction set of 8051.

PART - C
Answer any *One* questions.
Each question carries Ten marks.

20. Explain the architecture of 8085 with the help of a figure.

21. With neat figure explain the architecture of 8051.