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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fourth Semester BVOC SD Degree Examination, April 2024
SDC4IT17 – Operating Systems
(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 are the different types of operating system?
2. Define booting?
3. What is unix?
4. What are the benefits of using Linux instead of Windows?
5. Explain the features of real time operating systems?
6. Define thread?
7. What is CPU scheduling?
8. Define spooling?
9. What are the conditions for the occurrence of deadlock?
10. How operating system manages the free space?
11. What are the techniques for device management?
12. Discuss about distributed system with example?
13. What you mean by demand paging?
14. What is meant by swapping?
15. Define virtual memory?

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

16. Explain the features of UNIX in detail?
17. Discuss about disk scheduling policies?
18. Explain the evolution of operating system?
19. Explain the directory structures?
20. Explain page replacement policies?
21. Discuss about semaphore with example for mutual exclusion problem?
22. Explain the process state diagram?
23. Explain address binding in detail?

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

24. Explain briefly CPU scheduling algorithms?
25. Explain deadlock in detail?
26. Explain the functions of operating system?
27. Explain briefly the various schemes that can be adopted to manage memory?

2 x 10 = 20 Marks

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fourth Semester BVOC SD Degree Examination, April 2024

SDC4IT18 – Computer Security

(2021 Admission onwards)

Time: 2 hours

Max. Marks : 60

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

- 1 List the primary objective of the computer security.
- 2 Identify one common shortcoming of computer security measures.
- 3 What is encryption?
- 4 Explain the DNS Vulnerabilities.
- 5 Briefly describe the Buffer Overflow vulnerability.
- 6 What is the purpose of a directory authentication service?
- 7 Differentiate edge computing and cloud computing.
- 8 Describe the key features of the applet security model.
- 9 What are the different types of intruders?
- 10 What is privacy-enhanced email?
- 11 Explain the concept of DS (Domain Security) authentication.
- 12 What is the role of NCCC in the context of cyber security, and how does it contribute to national security?

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

- 13 Differentiate Symmetric and Asymmetric cryptography
- 14 Write a note on Kerberos.
- 15 Explain error detection mechanism briefly.
- 16 What is the use of Access control matrix? Explain with example.
- 17 Explain the Multi-phase commit protocols.
- 18 Explain the role of SSL in securing online communication.
- 19 Discuss the threats posed by DDoS attacks in network security.

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

- 20 Briefly explain any two Public key algorithms.
- 21 Discuss the significance of SSL/TLS in internet security protocols.

1 x 10 = 10 Marks

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fourth Semester BVOC SD Degree Examination, April 2024
SDC4IT19 – Dot Net Programming
(2021 Admission onwards)

Time: 2 hours

Max. Marks : 60

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

1. What do you mean by Common Language Runtime ?
2. Explain Just-in-Time Compiler.
3. How do you declare arrays in C#.
4. What is connection object
5. What do you mean by method overloading.
6. Explain Data Adapter.
7. Differentiate Constructor and Destructor.
8. How do you create menu.
9. Differentiate Status Bar and Progress Bar.
10. What do you mean by logical errors?
11. Briefly explain the role of SQL in web development.
12. What are the features of ADO.NET ?

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

13. Write a short note on Microsoft Intermediate Language
14. Compare and contrast ADO.NET architecture with ASP.NET data control.
15. Explain Fundamental concept of Object-Oriented Programming

16. Write a program to find the second largest element in single dimensional arrays.
17. How can you add or remove rows from the Data Table object of Dataset
18. Explain try and catch statement in exception handling.
19. Write a note on data binding.

PART - C

Answer any *ONE* questions.
question carries Ten marks.

20. Give a detailed note on building blocks of .NET platform
21. Write a C# program to add two number using GUI component

1 x 10 = 10 Marks

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester BVOC AUTOMOBILE/BVOC SD Degree Examination, April 2024

A13 – Entrepreneurship Development

(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks : 80

PART – A

All questions can be attended
Each question carries Two mark.
Ceiling -25 Marks

1. Define entrepreneurship.
2. Discuss two characteristics of entrepreneurs.
3. Point out the objectives of Entrepreneurial Development Programmes (EDP).
4. Differentiate between an entrepreneur and an intrapreneur.
5. What are MSMEs ?
6. Evaluate the functions of the NSIC.
7. What is Credit Guarantee Fund Trust Scheme for MSMEs ?
8. What are the objectives of NIESBUD.
9. Discuss the criteria for selecting a project when setting up an industrial unit.
10. List out the services provided by KITCO.
11. Describe Margin Money
12. What is feasibility study?
13. What is social cost benefit analysis ? .
14. Discuss any two subsidies available for entrepreneurs.
15. Describe the Green Channel concept.

PART – B
All questions can be attended
Each question carries Five marks.
Ceiling -35 Marks

16. Examine the recent developments and challenges faced by women entrepreneurs.
17. Discuss the functions of the Khadi Village Industry Commission (KVIC) in promoting entrepreneurship.
18. Evaluate the methods of training in Entrepreneurial Development Programmes (EDP).
19. Explain the various leadership and management styles in entrepreneurship.
20. Elaborate on the functions and services of the Kerala Industrial Technical Consultancy Organisation.
21. Explain the types and importance of subsidies available for entrepreneurs.
22. Assess the significance of a Single Window System in supporting entrepreneurs.
23. Describe the steps involved in confirming an entrepreneurial business idea.

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

24. Explore the role of Small Industrial Development Corporation (SIDCO) in supporting entrepreneurs.
25. Discuss the benefits and challenges associated with the setting up of Micro, Small, and Medium Enterprises (MSMEs).
26. Explain the steps involved in the registration of Small Scale Industries
27. Discuss the requirements of a good project report.

2 x 10 = 20 Marks

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester BVOC AUTOMOBILE/BVOC SD Degree Examination, April 2024

A14 – Public Health, Sanitation & Safety

(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks : 80

PART – A

Answer *all* questions.

Each question carries Two marks.

Ceiling -25 Marks

1. Define Diphtheria and describe the Causative Bacterium.
2. Name any two waterborne and airborne diseases.
3. Define contamination and give an example of a situation where it might occur.
4. Explain the Quality of Life Index and briefly explain how it is calculated.
5. Define food poisoning and provide a brief example of how it can happen.
6. Name any Four health programs implemented in India
7. Explain the disposal methods commonly used for night soil?
8. Define disinfection, and why is it important in the wastewater treatment and water purification?
9. Distinguish between contamination and pollution in simple terms.
10. What is the role of pre-treatment in wastewater handling?
11. Write some common symptoms of foodborne infections?
12. List two common household methods for purifying water and briefly explain how they work.
13. Describe the importance of First Aid in the workplace.
14. Explain two key principles for ensuring food safety to prevent foodborne illnesses.
15. What is PPE and its importance.

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

16. Explain the objectives and strategies of any five national programs aimed at disease elimination in India.
17. Discuss two major health challenges currently faced by India.
18. What is microbial growth inhibition?
19. What are Microbial growth patterns and factors affecting microbial proliferation
20. Explain the role of sewage treatment plants in preventing environmental pollution.
21. Explain four safety measures that individuals should follow to ensure the safe use of machines and tools.
22. What are the some basic food safety practices that can help prevent foodborne infections and intoxications?
23. Explain the importance of proper training in the correct use and maintenance of PPE in the workplace.

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

24. Explain the different types of diseases and its control measure operations in India.
25. Describe the Symptoms and the effects of food poisoning?
26. Discuss the environmental and health impacts of improper solid waste management, and propose three strategies to improve waste management practices in urban areas.
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 from exposure to these hazards.

2 x 10 = 20 Marks

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester BVOC AUTOMOBILE Degree Examination, April 2024

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 Define Fuel
- 2 Explain Knock rating.
- 3 Write any four advantages of Alcohol as alternative fuel used in IC engines.
- 4 What is stoichiometric ratio
- 5 Explain how TEL affects the life of a Catalytic converter.
- 6 Explain the relationship between oxygen sensor output and fuel mixture quality.
- 7 Draw a table to find the factor for coolant temperature
- 8 Where do we locate the secondary fuel filter in diesel engines?
- 9 Explain the functions of the secondary fuel filter in diesel engines.
- 10 List out any four Diesel injection components.
- 11 Explain the necessity of fuel injection pump in diesel engine.
- 12 Where is the distributor located on the engine?
- 13 Explain the function of an ignition coil?
- 14 What is the function of a ballast resistor?
- 15 Which material is used for manufacturing contact breaker points?

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

- 16 Explain the desirable characteristics of engine fuel.
- 17 Explain the process of Combustion and Detonation in CI Engine.
- 18 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.
- 19 Compare fuel injection with conventional carburetors.
- 20 Explain Common rail fuel injection with a neat diagram.
- 21 Explain Light and medium duty air cleaner in diesel engines, draw any one of them.
- 22 Draw a diagram showing the rotating magnet type of magneto ignition system and discuss its working.
- 23 Explain the Inductive ignition system with a neat diagram.

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

- 24 Explain about the usage of different Alternative fuels in IC Engines
- 25 What are the different working modes of Bosch Motronic systems?
- 26 Draw the layout and explain Bosch CRS
- 27 Give the 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 AUTOMOBILE Degree Examination, April 2024
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

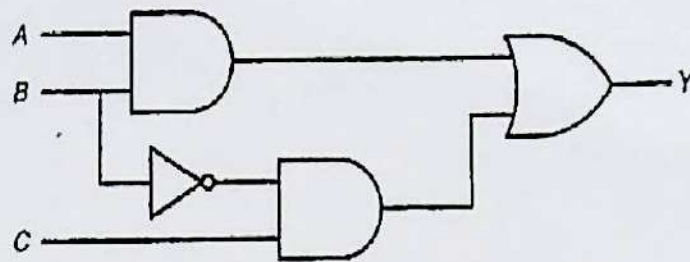
1. What is Octal Number System? Give two examples.
2. Convert below provided decimal Number to it's Binary equivalents.
a. 37 b. 15
3. Explain Excess code. Give examples.
4. Explain POS form.
5. Solve $AB + A(B+C) + B(B+C)$
6. What is De-Morgan's law.
7. Define Multiplexer?
8. What is RS-Flip Flop? Draw it's symbol.
9. Explain Shift Right register.
10. What is Ripple counter?
11. Explain TTL?
12. What is PAL?

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

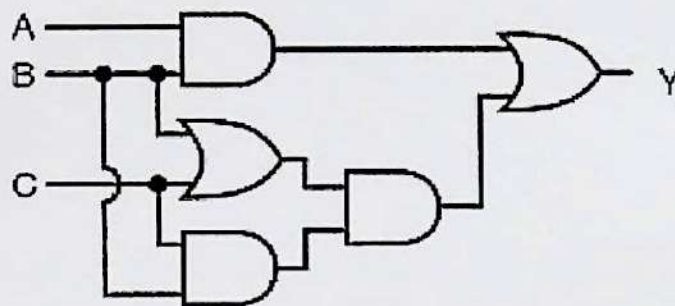
13. Convert the following binary numbers to Gray Code.
a. 1001101 b. 110010 c. 10111011

14. Write the output equation for the following logic circuit

a)



b)



15. Minimize the expression using K-Map.

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

16. Explain Half adder with neat diagram.

17. Explain D- 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. Explain about full subtractor with neat diagram

21. What is Shift Register? Explain it's 4 modes.

1 x 10 = 10 Marks

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester BVOC AUTOMOBILE Degree Examination, April 2024

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. Draw the structure of microprocessor based system.
2. What are the steps involved in fetch cycle?
3. Write an assembly language program to subtract two, 8 bit numbers stored at address 3150 and address 3151.
4. Write an ALP to find largest number in an array.
5. Define the term stack pointer.
6. What is read interrupt mask (RIM)?
7. Define memory interfacing.
8. Write any two advantages and disadvantages of memory mapped I/O?
9. Define PIC processor.
10. Explain DMA controller 8257.
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 memory write.
14. Write the ALP program for the following function. Load the accumulator with 82H and register B with A8H. Add both register. Also check the status of each flag.
15. Name and explain the various addressing modes employed in Microprocessor. Provide detailed examples to illustrate the functionality of each addressing modes.
16. Define interrupts in the context of microprocessor and write a detailed explanation of each category.
17. Draw the block diagram of the 8255 programmable peripheral interface and provide a detailed explanation of each block's function.
18. Make a comparison between Microprocessor and Microcontroller.
19. Provide a detailed explanation of the instruction set of 8051 Microcontroller.

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

20. Describe the architecture of 8085 Microprocessor with the help of a figure.
21. With a neat figure explain the architecture of 8051.

(1 x 10 = 10 Marks)