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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester BVOC AUTOMOBILE Degree Examination, April 2024

SDC2AU07 – Introduction to Automobile Engineering

(2021 Admission onwards)

Time: 2 hours

Max. Marks : 60

Answer all questions.
Each question carries Two marks.
Ceiling -20 Marks

- 1 Classify automobile on their energy consumption.
- 2 Explain the purpose of the Differential in an automobile.
- 3 Name the major electrical components in an automobile.
- 4 List any two advantages of conventional Carburetors.
- 5 What do you mean by MPFI?
- 6 What do you understand from the term Turbocharger?
- 7 What are the different requirements of a clutch?
- 8 Compare semi and automatic transmissions.
- 9 What is the function of balls in the recirculating ball-type steering gear box ?
- 10 Explain leading shoe in Brake system?
- 11 List the few advantages of CNG over diesel.
- 12 What are fuel cell vehicles?

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

- 13 Draw and mark the layout of the Transmission system of an automobile.
- 14 What are the advantages and disadvantages of rear axle - live axle vehicles?
- 15 What is ECU, explain how it controls fuel injection.
- 16 How does a three-way catalytic converter works?
- 17 Draw and explain Cone Clutch.
- 18 What is the transfer of weight in brakes? What is its effect?
- 19 What is a Mid-hybrid vehicle and a Full Hybrid Vehicle?

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

- 20 What are the main units used for the construction of an automobile? Describe any five of them briefly.
- 21 Explain the working of a simple Carburettor with the necessary diagrams.

1 x 10 = 10 Marks

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester BVOC AUTOMOBILE Degree Examination, April 2024

SDC2AU08 – Instrumentation for Automobile Engineers

(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks : 80

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

1. Explain the term accuracy and precision in measurement.
2. What is a digital instrument? Give two examples.
3. What is secondary instrument? Give examples.
4. Make a comparison between Ammeter and Galvanometer.
5. Draw the figure of Anderson's bridge.
6. Draw the figure of Kelvin's double bridge.
7. What is a transducer? Give two examples.
8. What is an attenuator?
9. Name one transducer commonly used for the measurement of temperature and define it.
10. Define the term fuel quality.
11. Provide the definition of coolant temperature.
12. What is oil pressure of an IC engine?
13. What is a sensor?
14. Define fuel metering.
15. Define exhaust temperature of Automobile.

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

16. Differentiate between PMMC and MI instruments.
17. Explain the different types of operating torques employed in measuring instruments.
18. With the help of neat figure explain the construction and working of shunt type ohm-meter.
19. Explain the construction and working of Wheatstone bridge with the help of figure.
20. Using neat figure differentiate between primary and secondary transducers using Bourdon tube and LVDT as examples.
21. With neat diagram explain the working of piezoelectric transducer.
22. Explain the working of CRT using neat figure.
23. Explain crank angle position sensor.

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

24. Explain the construction and working of dynamometer type wattmeter and induction type wattmeter using figure.
25. Explain any two methods used for the measurement of self inductance using neat diagram.
26. Using figure explain low pass filter, high pass filter and band pass filter in detail.
27. Explain vehicle speed sensor and detonation sensor in detail.

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester BVOC AUTOMOBILE Degree Examination, April 2024

SDC2CA06 – Financial and Management Accounting

(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 management accounting.
2. Define standard costing.
3. What is contribution?
4. List out any two operating budgets.
5. What is vertical analysis?
6. What is P/V Ratio?
7. What is closing stock ?
8. Mention any two causes of material cost variance.
9. How is the margin of safety calculated?
10. Mention any two limitations of financial analysis?
11. What is contra entry?
12. What is a Journal?
13. What is meant by three column cash book ?
14. What is meant by posting?
15. Write any two objectives of preparing trial balance.

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

16. Define marginal costing? What are its assumptions
17. Define accounting. What are its functions?
18. What are the features of management accounting?
19. Record the following transactions in Cash book

January 1	Cash balance ₹ 10,000
January 4	Cash sales ₹ 8,000
January 9	Purchased goods for cash ₹ 4,000
January 13	Rent paid ₹ 2,000
January 28	Salaries paid ₹ 2,000
January 30	Interest received ₹ 3,000

20. Determine the amount of variable cost from the following particulars:

Sales	₹1,50,000
Fixed cost	₹ 30,000
Profit	₹ 40,000

21. From the following information, ascertain by how much the value of sales must be increased by the company to break-even.

Sales	₹3,00,000
Variable cost	₹1,50,000
Fixed Cost	₹2,00,000

22. The standard material required for production is 10,500 kgs. A price of ₹ 2 per kg has been fixed for the materials. The actual quantity of materials used for the product is 11,000 kgs. A sum of ₹ 24,750 has been paid for the materials.

Calculate : (i) Material Cost Variance
 (ii) Material Price Variance
 (iii) Material Usage Variance

23. Journalise the following transactions in the books of Saleem for the month of January, 2022.

Saleem commenced business with cash	₹50,000
Bought goods from Rajesh & Co.	₹10,000
Sold goods to Devan	₹5,000
Paid in to bank	₹20,000
Paid wages	₹4,000
Paid cheque to Rajesh & Co.	₹9,500

PART - C

**Answer any two questions.
Each question carries Ten marks.**

24. Define Accounting. Discuss in detail various accounting concepts.
25. What is financial analysis? Briefly explain various tools and techniques of financial statement analysis.
26. From the following budgeted data, forecast the cash position at the end of April, May and June 2023:

Month	Sales (₹)	Purchases	Wages
February	1,20,000	84,000	10,000
March	1,30,000	1,00,000	12,000
April	80,000	1,04,000	8,000
May	1,16,000	1,06,000	10,000
June	88,000	80,000	8,000

Additional information:

- a) *Sales*: 20% realized in the month of sales and balance realized in two subsequent months.
- b) *Purchases*: These are paid in the month following the month of supply.
- c) *Wages*: 25% paid in arrears following month
- d) *Cash in hand*: ₹5,000 on 1st April, 2023

27. From the following trial balance and additional information, you are required to prepare Trading, Profit & Loss Account and Balance sheet.

Particulars	Dr. Amount (₹)	Cr. Amount (₹)
Capital		20,000
Sundry debtors	5,400	
Drawings	1,800	
Machinery	7,000	
Sundry creditors		2,800
Wages	10,000	
Purchases	19,000	
Opening stock	4,000	
Bank balance	3,000	
Carriage charges	300	
Salaries	400	
Rent and taxes	900	
Sales		29,000
	51,800	51,800

Closing stock is valued at ₹ 1,200

2 x 10 = 20 Marks

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Second Semester BVOC SD Degree Examination, April 2024
SDC2IT06 – Programming in Java
(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks : 80

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

1. Define byte code.
2. What is polymorphism?
3. What is the purpose of '*Finally*' block in exception handling?
4. Why 'public static void main (Strings [] args)' method used in java program?
5. Define literals.
6. How '*Catch*' block differ from '*Finally*' block in java?
7. Mention the use of '*int*' and '*Integer*' in java.
8. What is overriding?
9. What is priority thread?
10. What is *super*?
11. What is an *event*?
12. What is the purpose of '*implements*' keyword?
13. Define constructor.
14. Why Java is platform independent?
15. Define JVM,JRE and JDK.

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

16. What are the characteristics of OOPs?
17. Mention the main difference between *throw* and *throws*.
18. Explain the various types of Applets.
19. Compare the contrast between Object Oriented and Procedure Oriented programming.
20. Write a java program to scan three numbers and find the greatest among them.
21. Explain Inheritance in java.
22. Explain exception handling mechanism in java.
23. Explain the structure of AWT.

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

24. Explain the life cycle of a Thread.
25. Explain different types of JDBC statements with examples.
26. Explain the various control statements in java.
27. Explain the hierarchy and role of various containers in java.

2 x 10 = 20 Marks

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Second Semester BVOC SD Degree Examination, April 2024
SDC2IT07 – Relational Database Management System
(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks : 80

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

1. Define database?
2. What is relational model?
3. Differentiate primary key and foreign key with a suitable example?
4. Define entity?
5. Write the need of normalization?
6. What are constraints?
7. How to remove duplicate rows in SQL?
8. How to handle errors in SQL?
9. What are the advantages of stored procedures?
10. Define cursors?
11. What are good and bad decomposition?
12. Define normalization?
13. Explain different languages in DBMS?
14. What is the difference between DROP and DELETE command?
15. Write the use of GROUP BY clause?

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

16. Discuss different extended ER diagram?
17. What are the advantages and disadvantages of using DBMS approach?
18. Write a note on JOIN dependencies and 5NF?
19. How will you create a user-defined functions? Explain with an example?
20. What is Normalization? Explain its role in database design?
21. What are the different types of data model?
22. Explain the various datatypes used in SQL?
23. Describe the use of foreign key constraints with an example?

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

24. What is a trigger? Write its relevance? How will you create a trigger?
25. Explain the advantages of using DBMS over file systems?
26. Explain functional dependency and multivalued dependency with suitable examples?
27. Explain ER model?

2 x 10 = 20 Marks