

## FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

## Third Semester BVOC AUTOMOBILE/BVOC SD Degree Examination,

November 2023

## A11 – Basic Mathematics and General Awareness

(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

## PART A

Answer *all* questions.Each question carries *Two* marks.

1. If the code of NUMBER is OTNAFQ, then what is code of CHANGE?
2. Arun leaves home and cycles 10 km South, then turns right and cycles 5 km, turns right again and continues for 10 km. He then turns left and goes on for 10 km. How much distance must he travel to return home in a straight line?
3. In a row of boys, A is 10<sup>th</sup> from the left and B is 9<sup>th</sup> from the right. If they interchange their positions, A becomes 15<sup>th</sup> from the left. How many boys are there in the row?
4. The average of five consecutive numbers A, B, C, D and E is 50. What is the product of A and E?
5. X and Y together can complete a piece of work in 25 days and Y alone can do it in 30 days. In how many days can X complete the work alone?
6. The selling price of 40 items is equal to the cost price of 35 items. What is the profit or loss percentage?
7. Find the simple interest on Rs. 84000 at 12% per annum for 4 years.
8. Solve  $2x^2 - 5x + 2 = 0$
9. What are the different types of researches?
10. Define operating system. Give examples.
11. What are the benefits of computer networking?
12. What is meant by graphical user interface (GUI)?
13. What is MS DOS?
14. How do QR codes work?
15. Differentiate between a cheque and a demand draft.

[ Ceiling = 25 Marks]

**PART B**  
**Answer all questions.**  
**Each question carries Five marks.**

16. If 20% of P is added to Q, P then increases by 50%. What is the respective ratio of P and Q?
17. The product of the ages of Sam and Ram is 20. If the age of Ram is more than Sam's age by 1 year, then find Ram's age.
18. A bag contains 7 white balls and 5 black balls. Two balls are drawn at random. Find the probability that they are of same colour.
19. Explain different applications of ICT in research.
20. Explain the features of MS Word.
21. What are the different types of threats to a computer system?
22. Write a short note on national electronic funds transfer (NEFT).
23. Explain any five types of cheque.

**[ Ceiling = 35 Marks]**

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

24. Explain different methods of research.
25. a) What is a database management system?  
b) Discuss the advantages and disadvantages of DBMS.
26. What are input and output devices? Explain different input and output devices in detail.
27. Discuss different types of bank accounts.

**[2 x 10 = 20 Marks]**



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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BVOC AUTOMOBILE/BVOC SD Degree Examination, November 2023

A12 – Professional Business Skills

(2019 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

**PART – A**

**Answer *all* questions.**

**Each question carries Two mark.**

**Ceiling -25 Marks**

1. Define Professionalism.
2. What is SWAYAM?
3. What is asynchronous learning?
4. List out any two initiatives for education with information technology.
5. Mention any three techniques of handling missing data.
6. What do you mean by Gamification?
7. What is internet hoax?
8. What is SPAM?
9. What is diagnostic analysis?
10. What do you mean by verbosity?
11. What is online advertising?
12. State various solutions to Information overload.
13. What are floating advertisements?
14. List out the most common types of e-governance.
15. What do you meant by Hacking?

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

16. Discuss the traits and qualities of a good professional.
17. Explain the scope of bigdata.
18. State various general threats to IT industries.
19. Explain the application of Audio in E-learning.
20. Briefly explain various data analytic tools.
21. Discuss the important soft skills for business success.
22. Differentiate between traditional marketing and digital marketing.
23. Mention recent trends in Digital marketing.

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

24. Who is a data scientist? Explain the role of data scientist in business and industry.
25. What is e-mail? Discuss various dos and don'ts in e-mail communication.
26. Explain digital divide? Explain various factors that contribute to the digital divide.
27. What is Digital marketing? Discuss in detail various types of Social Media Advertisements.

**(2 x 10 = 20 Marks)**

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BVOC AUTOMOBILE Degree Examination, November 2023

GEC3CM11 – Human Resources Management

(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

**PART – A**

Answer *all* questions.

Each question carries 2 marks.

Ceiling -25 Marks

1. Define personal management.
2. Write a note on 'job enrichment'.
3. Give a brief of manpower planning.
4. What is meant by vestibule training?
5. Explain the term 'career development'.
6. Define job evaluation.
7. Write a note on 'hot stove rule'.
8. Give any two methods of workers participation in management(WPM).
9. Explain recruitment.
10. What is paired comparison method?
11. What is meant by E-HRM?
12. Discuss the term 'on the job training'.
13. Distinguish between human resource planning and strategic planning.
14. What are the aims of discipline?
15. Give a brief of 'Rowan plan'.

**PART – B**

Answer *all* questions.

Each question carries 5 marks.

Ceiling -35 Marks

16. Discuss the functions of HRM.
17. Distinguish between personal management and human resource management.
18. Explain the objectives of HR planning.
19. Discuss the features of external sources of recruitment.



20. Briefly explain the different types of training.
21. What is strategic human resource planning?
22. Discuss the stages of career development.
23. What are the key factors that influence wage system?

**PART - C**

**Answer any *two* questions.  
Each question carries 10 marks.**

24. Define Human resource management. Discuss its scopes.
25. What is job analysis, explain various methods used in job analysis.
26. Define grievances. Discuss the causes of grievances.
27. What is Performance appraisal, explain the steps involved in performance appraisal.

**2 x 10 = 20 Marks**

17. A generating station has a connected load of 40MW and maximum demand of 20MW. The unit generated being  $61.5 \times 10^6$  per annum. Calculate
- The demand factor.
  - Load factor.
18. Explain shaded pole induction type relay.
19. What is insulation coordination? List out it's steps?

**PART - C**

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

20. With the neat diagram explain the working of buck converter. Draw output voltage waveform  $V_O$  and  $V_L$ . Also derive the  $V_O/V_d$ .
21. With neat diagram explain construction of underground cable, describe about it's each components.

**1 x 10 = 10 Marks**

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BVOC AUTOMOBILE Degree Examination, November 2023

SDC3AU12 – Power Systems and Power Electronics

(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 BJT? Draw it's symbol.
2. Define Latching and Holding current of a transistor.
3. What is GTO? Draw its symbol.
4. Draw the basic structure of N channel MOSFET.
5. Define chopper.
6. Draw the circuit diagram for Boost converter.
7. What is conventional and non-conventional source of energy? Give examples.
8. What is skin effect?
9. Define following terms.
  - a. Demand factor.
  - b. Load factor.
10. What is symmetric fault in power system?
11. What are the classifications of relays?
12. Enlist the different arc quenching medium used in circuit breakers.

**PART – B**

**Answer all questions.**

**Each question carries Five marks.**

**Ceiling -30 Marks**

13. Draw circuit diagram for full wave rectifier with R load , explain the working.
14. What is cyclo converter, draw and explain the working of single phase to single phase step up cyclo converter.
15. With a neat diagram explain the working of a buck boost converter.
16. Explain corona loss?



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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BYOC AUTOMOBILE Degree Examination, November 2023

SDC3AU13 – Automotive Electrical and Electronic 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. Explain the advantages of Pb Acid Batteries over conventional batteries.
2. Explain about the positioning of the vehicle battery.
3. Explain Oven test.
4. Define Starting Motor.
5. Explain how permanent magnet starter achieve greater torque.
6. Explain advantages of pre-engaged starters.
7. Give a few examples of continuous electrical loads of the vehicle.
8. Explain about the earth return system.
9. What are the advantages of three phase alternator?
10. Explain DTC.
11. Explain benefits of OBD.
12. Explain the parking brake warning system.
13. What do you mean by visual inspection?
14. Explain the term 'continuity checking'.
15. "Automobile lights are found to be not working", list down the possible faults.

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

16. Explain the constructional details of Pb Acid Battery.
17. Write about the classification of starting motor.
18. Explain the working of permanent magnet starter.
19. Explain automotive alternator.
20. Describe alternator testing procedure.
21. Explain EMC and EMI.
22. Explain the importance's of different vehicle sensors in ECU.
23. Write a short note on charger maintenance.

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

24. Explain the working of different starter drive units.
25. With a neat diagram, explain construction of DC generator.
26. Write note on On-Board Diagnostic system.
27. Explain Battery maintenance in detail.

**2 x 10 = 20 Marks**

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BVOC AUTOMOBILE Degree Examination, November 2023

SDC3AU14 – Electrical Machines and Machine Drives

(2021 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

**PART – A**

**Answer *all* questions.**

**Each question carries Two mark.**

**Ceiling -25 Marks**

1. Write the equation of emf generated in the transformer? Define each terms.
2. Draw the equivalent circuit of a transformer.
3. Explain the different losses in transformer.
4. Define the term Armature Reaction in DC machine.
5. Explain the terms Stator and Rotor in DC machines.
6. Why Split rings are used in DC machine instead of Slip rings?
7. Three phase synchronous motor will always run at synchronous speed, explain.
8. What is Hunting in Synchronous machines?
9. What is meant by Crawling and Cogging of induction motor?
10. List out the methods of speed control of cage type and slip ring induction motor?
11. List the different types of single phase induction motors.
12. What is Linear Induction Motor?
13. List out the applications of Switched Reluctance Motor.
14. Define Drives?
15. Write the classification of Electric Drives.



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

16. Explain construction and working principle of a Transformer.
17. Derive the emf equation of a Generator.
18. What are the different types starting methods employed in Synchronous motor?
19. Explain the working of three phase induction motor?
20. With the help of a diagram explain the working of capacitor start capacitor run motor.
21. Explain brushless DC motor, what are the applications?
22. Compare AC drives and DC drives.
23. What is voltage and frequency (V/F) control of Induction motor drives

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

24. Explain the classification of transformers.
25. Explain the different methods of speed control of DC motor.
26. With neat diagram explain the construction and working of a alternator.
27. Explain about the different types of rotors in Induction machine.

**2 x 10 = 20 Marks**

## FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

## Third Semester BVOC SD Degree Examination, November 2023

## SDC3IT11 – Software Engineering

(2022 Admission onwards)

Time: 2 hours

Max. Marks: 60

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

1. What is spiral model?
2. What are the Drawbacks of RAD Model?
3. What are the types of feasibility study?
4. What you mean by DFD?
5. List the stages of requirement engineering process.
6. What you mean by modularization?
7. What is the Objective of Architectural Design?
8. Explain software Reengineering.
9. Distinguish between alpha testing and beta testing
10. What are the various types of maintenance?
11. What is software configuration management?
12. Define SQA Plan.

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

13. Compare time boxing and incremental model?
14. What you mean by SQA framework?
15. Explain IEEE standard for SRS.
16. List and explain different types of testing done during the testing phase.
17. Explain the different types of maintenance.
18. Explain about the software testing strategies
19. Explain CASE tools.

**PART - C**

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

20. Describe spiral model? What are the advantages and disadvantages?
21. Explain software design strategies?

**1 x 10 = 10 Mar**



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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BVOC SD Degree Examination, November 2023

SDC3IT12 – Programming in Python

(2022 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

**PART – A**

Answer *all* questions.

Each question carries Two mark.

Ceiling -25 Marks

- 1 How will you convert a string to an int in python?
- 2 What is the purpose of // operator in python?
- 3 What is meant by dynamically typed language?
- 4 What is a variable?
- 5 Write a python program to accept the radius of a circle and display the circumference.
- 6 What is the role of CGI in python?
- 7 What is an Instance Variable in Python?
- 8 What are some common lists that are used when designing a page?
- 9 How is Cell Padding different from Cell Spacing?
- 10 Differentiate between an expression and a statement in python?
- 11 Explain the syntax and usage of eval() function.
- 12 What do you understand by "Objects are mutable"?
- 13 How do you create a database in MySQL?
- 14 What is Encapsulation ?
- 15 What are some key features of MySQL?

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

- 16 Explain the different data types in python?
- 17 What is a user defined function? Explain with examples?
- 18 Write a python program to find the sum of digits of a number.
- 19 Write short note on exception handling in python?
- 20 Explain different conditional statements with example.
- 21 Write short note on method overriding in Python?
- 22 How to pass data from html form to python file.
- 23 Write a Python program to create a table and insert some records in that table. Finally selects all rows from the table and display the records.

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

- 24 What is dictionary? Explain built in dictionary functions.
- 25 Write a Python program that overloads + operator, to add two objects of a class.
- 26 Explain python functions for MySQL operations.
- 27 Explain HTML form controls with examples.

**2 x 10 = 20 Marks**

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BVOC SD Degree Examination, November 2023

SDC3IT13 – Computer Networking Concepts

(2022 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 connection oriented services ?
2. What is substitution cipher?
3. What do you mean by the term Polling?
4. Write a brief note on Computer networks.
5. Distinguish between FTP and HTTP.
6. Write a short note on Wi-Max.
7. What is Hash function?
8. Write a short note on Firewalls.
9. Define random access.
10. Define multiple access.
11. What is packetizing ?
12. Differentiate between flow control and error control.
13. Explain the difference between 3G and 4G mobile networks.
14. Explain the function of DNS
15. What are the function of MAC?



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

16. Group the OSI layers by function.
17. Explain the different services provided by network security.
18. Compare and contrast CSMA/CD and CSMA/CA.
19. Write a short note on RSA cryptosystem.
20. Explain IEEE 802.11 in detail.
21. Explain Client/Server paradigm in detail.
22. Discuss the concept of redundancy in error detection and correction.
23. Explain VRC with example.

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

24. Explain TCP/IP model in detail.
25. Explain the architecture and services of electronic mail.
26. Explain various random access protocol in detail.
27. Explain different Routing algorithms.

**2 x 10 = 20 Marks**