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2B3N22347

(Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester Integrated M.Sc. Geology Degree Examination, November 2022

GL03A12–Research Methodology

(2020 Admission onwards)

Time: 2 ½ hours Max. Marks: 80

(Draw neat sketches, wherever necessary)

PART – A

Answer ***all*** questions.

Each question carries **Two** mark.

Ceiling -25 Marks

1. What is Research?
2. Explain the role of references in a manuscript.
3. Define Impact Factor of a journal.
4. Why do academics publish in predatory journals?
5. What is ISSN Number?
6. Differentiate between journal articles and books.
7. What type of literature is short communication?
8. What is Newsletter?
9. List out the criteria's for choosing the Research Methodology.
10. What do you meant by AGRICOLA?
11. Explain peer-review process
12. Distinguish between methodology and methods?
13. What is Scopus?
14. What are the main parts of a statistical table?
15. Difference between primary and secondary sources of literature.

PART – B

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

16. Give an account on Thesis components
17. Describe the different types of Research Methodology.
18. Briefly explain the steps in preparing and presenting a conference paper
19. Differentiate between observational and experimental research.
20. Write about the importance of review of literature in research.
21. Explain the scholarly journals, popular journals and trade journals?
22. Describe industrial training. Briefly explain the objectives and benefits of industrial training.
23. Write a short note on SPSS software. Discuss about the advantages and disadvantages of SPSS software.

PART - C

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

24. What is a research project proposal? What are the different components of a project proposal?
25. Write a detailed essay on selection of journal. Explain the factors to consider for selecting the right journal for publication.
26. What are the main steps involved in the selection of research topics and planning of research.
27. Explain about manuscript preparation, Plagiarism and different types of plagiarism.

2 x 10 = 20 Mark

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1B3N22348 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester Integrated M.Sc. Geology Degree Examination, November 2022
PHY3IC02 - Optics & Spectroscopy, Modern Physics, Electronics and Numerical Method

(2020 Admission onwards)

Time: 2 ½ hours Max. Marks: 80

PART – A
All questions can be attended
Each question carries Two marks.

1. Distinguish between Fresnel and Fraunhofer diffractions?
2. Define photo electric effect?
3. Difference between stimulated and spontaneous emissions?
4. What is positive and negative feedback?
5. Discuss the Simpsons rule for numerical integration.
6. Define the uncertainty principle in momentum and position of a particle.
7. What is binary number system?
8. Define half-life of a radioelement?
9. Write a short note on e-rays and o-rays.
10. Define Eigen functions.
11. Explain the working of an AND gate. Sketch the truth table.
12. State and explain superposition principle.
13. What is meant by population inversion?
14. What are coherent sources?
15. Write Taylor series expansion of Sin x.

Ceiling - 25 Marks

PART – B

All questions can be attended
Each question carries Five marks.

16. What are constructive and destructive interferences? Give the conditions.
17. Explain the working of a Zener diode as voltage stabilizer?
18. Explain the principle and working of a Ruby laser?
19. Explain the stability of nucleus in terms of proton and neutron numbers.
20. Discuss the method of fitting a set of data to a straight line by the method of least squares.
21. What are the basic postulates of wave mechanics? Write down the Schrodinger's time dependent and independent equations.
22. What will be the Brewster's angle for a glass slab (n=1.5) immersed in water (n=1.33)?
23. Discuss the method of fitting a set of data to a straight line by the method of least squares.

Ceiling - 35 Marks

PART - C

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

24. Derive an expression for the intensity distribution in the diffraction pattern of a single slit and draw intensity curve.
25. Describe the principle and working of a full wave rectifier. Obtain the expressions for efficiency and ripple factor.
26. Explain the principle, construction, and working of a He-Ne laser.
27. What is interpolation? Discuss various types of finite difference operator. Construct a forward difference table for the following data:

X :	0.25	0.26	0.27	0.28	0.29
Y :	0.2474	0.2571	0.2667	0.2764	0.2860

2 x 10 = 20 Mark