11425

Reg. No. | | | | | | | | |

# IV Semester B.Sc. Degree Examination, September - 2021

## COMPUTER SCIENCE

## Operating System and UNIX

## (CBCS Scheme Repeaters)

## Paper - IV

**Time : 3 Hours** **Maximum Marks : 70**

***Instructions to Candidates:***

1. Answer **ALL** Sections.

### SECTION - A

**I.** Answer any **TEN** questions. Each question carries **TWO** Marks. **(10×2=20)**

1. Define Operating System.
2. What is Process?
3. What is deadlock?
4. What is Virtual Memory?
5. List the components of a Computer System.
6. Define batch OS.
7. What is Swapping?
8. Mention any two directory related commands.
9. Mention different Categories of files.
10. List the three modes of Vi Editor.
11. Write Syntax for if-control structure.
12. Explain grep command.



### SECTION - B

**II.** Answer any **FIVE** questions. Each question carries **TEN** Marks **(5×10=50)**

13. What are the different types of OS? Explain any two in detail. **(10)**

14. a) Explain Process State Diagram **(5)**
    b) Explain FCFS Scheduling with an example. **(5)**

**[P.T.O.**

15. a) Explain Dining-Philosophers Problem. (5)
    b) Explain deadlock Avoidance. (5)

16. a) What is fragment? Explain. (5)
    b) Explain Demand-Paging with a block diagram. (5)

17. a) Explain FIFO Page Replacement. (5)
    b) What are the different file access methods? Explain. (5)

18. a) Explain the history of UNIX. (5)
    b) What are the features of UNIX? (5)

19. a) Explain UNIX file System with a neat diagram. (5)
    b) Explain Vi Editor. (5)

20. a) Explain for loop with an example. (5)
    b) Explain while and until loops with an example. (5)

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# IV Semester B.Sc. Degree Examination, September - 2021

## CHEMISTRY

## (CBCS Scheme Repeaters 2019-2020 Onwords)

## Paper - IV

**Time : 3 Hours** **Maximum Marks : 70**

***Instructions to Candidates:***

1) The question paper has two parts. Answer both the parts.

2) Write diagrams and equations wherever necessary.

### PART - A

**I.** Answer any eight of the following questions. Each question carries Two marks. **(8×2=16)**

1) State condensed phase rule? Indicate the terms.

2) Define axe's of symmetry.



3) Write the principle involved in desilverisation of lead.

4) What is induced ratio activity? Give an example.

5) Write the biological impurities present in water.

6) Mention any two advantages of powder metallurgy.

7) State group displacement Law.

8) What is meant by tempering of steel?

9) Explain Gattermann - Koch aldehyde synthesis.

10) How do you prepare corboxylic acid by Acid hydrolysis of nitriles?

11) How do you prepare ethylaceto acetate from ethyl acetate?

12) Write a note on Green house effect.

**[P.T.O.**

## PART - B

Answer any **Nine** of the following questions. Each question carries **6** marks. **(9×6=54)**

13) a) Construct the phase diagram of sulphur system & lable the parts. **(4+2)**
b) What are freezing mixtur? Give an example.

14) a) Derive Bragg's equation. **(4+2)**
b) Write a note on Smectic liquid crystals.

15) a) Draw labelled phase diagram of lead - siliver system. Identify eutectic point, give the composition at this point. **(4+2)**
b) Give the applications of high temperature super conductors.

16) a) Write a note on Reverse Osmosis method for purification of water. **(4+2)**
b) What are miller indises?

17) a) Write the application of radio active isotopes in the field of
i) Agriculture,
ii) Medicine. **(4+2)**
b) Explain the role of coolant in a nuclear reactor, taking an example.



18) a) Complete the following reactions:

i) ${}_{11}Na^{23} + {}^{1}_{1}H \rightarrow {}_{12}Mg^{23} + .....$

ii) ${}_{6}C^{12} + {}^{2}_{1}H \rightarrow {}_{5}B^{10} + .....$

iii) ${}_{12}Mg^{24} + - - \rightarrow {}_{11}Na^{23} + {}_{2}He^{4}$

iv) ${}_{4}Be^{9} + {}_{2}He^{4} \rightarrow {}_{6}C^{12} + .....$ **(4+2)**

b) Define the terms mass defect and binding energy.

19) a) Describe the production of tungsten powder from wolframite. **(4+2)**
b) Explain nuclear fission with an example.

20) a) Discuss Iron - Carbon phase diagram. **(4+2)**
b) How does silicon influence property of steel?

21) a) Discuss mechanism of Perkin condensation with an example. **(4+2)**
b) What are Ferro alloys? Give example.

22) a) Explain the following reactions. **(4+2)**
i) Manich reaction
ii) Clemmenson reaction.

b) How does an aldehyde react with $NH_3$? Give equation.

23) a) How do you get following compounds starting from carboxylic acid? Give equations.
i) Acid chlorides
ii) Amides. **(4+2)**

b) Write the structure of Tartaric acid.

24) a) Explain the Preparation of Cinnamic acid and Butanone from diethyl malonate. Give equation. **(4+2)**

b) How do you convert ethylacetoacetate in to succinic acid? Give equation.

25) a) Describe the different stages of sewage treatment. **(4+2)**

b) Write a note on Acid rain.