2023

COMPUTER SCIENCE

(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three hours

All the questions are compulsory.

The figures in the right margin indicate full marks for the questions.

Select the correct answer from each of the following and rewrite it.

1. The way to convey a python object into a byte stream is called –   1

    (A) Pickling

    (B) Unpickling

    (C) Dump ( ) method

    (D) Load ( ) method

2. Pushing an element into stack already having ten elements and stack size of 10, then stack becomes –   1

    (A) Underflow

    (B) Uses flow

    (C) Crash

    (D) Overflow

3. In files there is a key associated with each record which is used to differentiate among different records. For every file, there is atleast one set of keys that is unique. Such a key is called –   1

    (A) Unique key

    (B) Prime attribute

    (C) Index key

    (D) Primary key

4. A group of two or more similar things or people interconnected with each other is called –   1

    (A) Gateway

    (B) Communication

    (C) Network

    (D) Hub

5. A user wants to upload a text document at the rate of 10 pages per 20 second. What will be the required data rate of the channel? (Assume that 1 page contains 1600 characters and each character is of 8 bits) –   1

    (A) 6400 Kbps

    (B) 6.25 Kbps

    (C) 6.4 Kbps

    (D) 6.5 Kbps

Give very short answer of the following questions:

6. "Every syntax error is an exception but every exception cannot be syntax error".

   Justify the statement.   1

7. Write any one application of Queue in real life.   1

8. Define a Hashing.   1

9. Write the formula for Standard deviation.   1

10. What is database schema?   1

11. Define degree of a relation.   1

12. If R1 is a relation with 8 rows and 5 columns, then what will be the cardinality of

    R1?   1

13. Give the syntax of DESCRIBE table.   1

14. A Company wants to form a network on their five computers to a server within

    the company premises. Represent star topologies diagrammatically for this

    network.   1

15. Miss Rani owns a factory which manufactures cosmetics items. Suggest her the

    advantages of having a web page for her factory.   1

Give short answer of the following questions :

16. Write the python code to create a text file test.txt and write data in it.   2

17. What is the PUSH and POP operations in a stack?   2

18. How is queues data type different from deque data type?   2

19. Write any four limitations of a file system.   2

20. Observe the following table carefully and write the names of the most appropriate columns, which can be considered as (i) primary keys and (ii) candidate key.   2

Part_no	Part_name	Size	Qty
p1	Xyz	13×11	1000
p2	abc	10×10	2000
p3	pqr	6×6	300
p4	uvw	7×9	500

21. What is the purpose of the following clauses in a select statement?

   (a)   ORDER BY

   (b)   GROUP BY

      2

22. Write the output produced by the following SQL statement:

   (a)   SELECT ROUND(243.9324,–1)

   (b)   SELECT LENGTH("Information Technology")

      2

23. Identify the type of topology from the following:

   (a)   Each node is connected with the help of a single cable.

   (b)   Each node is connected to the next, forming a loop.   2

24. How is Snooping different from Eavesdropping?   2

25. Draw a block diagram of Half – duplex and Full duplex Communication.   2

Give answer of the following questions :

26. Define the following:

   (a)   Exception Handling

   (b)   Throwing an exception

   (c)   Catching an exception   1+1+1=3

27. Write user defined function to check whether the given string is palindrome or
    not, using deque.   3

28. Write an algorithm for Binary search method.   3

29. Define the following: 1+1+1=3

   (a)   Mean

   (b)   Median

   (c)   Mode

30. Why foreign keys are allowed to have NULL values? Explain with an example.

3

31. Write a Python program to reverse a string using stack. 5

32. Write a Python program to sort a list of numbers in ascending order using selection sort method. 5

33. (a) Cite any one difference between Single Row Function and Aggregate Functions.

(b) What is the use of WHERE clause in SQL?

(c) Consider a table PRODUCT having fields PCode, PName, UPrice, Manufacturer. Write the SQL commands:

(i) List the Product Code, Product Name and Price in descending order of their product name.

(ii) Add a new Column named "Discount" to the table PRODUCT.

(iii) Increase the price by 12 per cent for all the products manufactured by Dove.

5

34. (a) What is data communication?

(b) What are the main components of data communication?

(c) Name two switching techniques used to transfer data between two terminals.

(d) Which transmission media carries signals in the form of light? 5

_____

2023

GEOGRAPHY

(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three hours

All the questions are compulsory.

The figures in the right margin indicate full marks for the questions.

Answer Question Nos. 1 to 4 are Multiple Choice Questions.
Choose the correct answer from the alternatives and
rewrite it along with the corresponding alphabet.

1. A bell shaped Population Pyramid represents –   1

   (A) declining population

   (B) expanding population

   (C) population explosion

   (D) stagnant population

2. The 'National Youth Policy 2014' defined youth as persons in the age group of which of the following?

    1

    (A) 15 - 29 years

    (B) 15 - 39 years

    (C) 15 - 49 years

    (D) 15 - 59 years

3. Which one of the following is the name of Primitive subsistence farming practised in Central America?

    1

    (A) Roca

    (B) Milpa

    (C) Ladang

    (D) Ray

4. The 'Big Trunk Route' is the name of ocean route given to which of the following? 1

    (A) The North - Pacific route

    (B) The South - Pacific route

    (C) The North - Atlantic route

    (D) The South - Atlantic route

2

Answer Question Nos. 5 to 14 in a sentence each.

5. State the speciality of Trunk Farming developed in Europe.   1

6. What is the visible sign of high rate of atmospheric pollution in big cities of India.   1

7. Give the most effective way of increasing net-sown area in Manipur.   1

8. How does the Digital Divide exist in a country like India?   1

9. Why does participation rate high in the areas of less economic development in India ?   1

10. How would the exploitation of farmers by money lenders check in Manipur? 1

11. "Population growth beyond a certain limit is undesirable." Give a relevant reason.1

12. How did the Green revolution led to regional disparities in agricultural development till 1970s in India.   1

13. Suggest one measure to minimise the problem caused by urban waste disposal.1

14. Draw a diagram of Double Village.   1

Answer Question Nos. 15 to 24 in about 30 words each.

15. State two main objectives of Kolkhoz introduced in erstwhile Soviet Union under Socialist regime.

    2

16. What are the two reasons that have forced Indian farmers to fall in the trap of indebtness?

    2

17. What are the two factors that determine the types of rural settlement in Manipur?

    2

18. Explain how modern communication system has converted the world into global village.

    2

19. How do rural settlements represent a great challange and opportunity for planners? Give two points.

    2

20. Explain the second and third phase of the evolution of Imphal town.   2

21. "Rural - urban migration brought severe demographic imbalance between them." Justify the statement by citing two points.

    2

22. "Forests are fundamental to the economy and culture of the people of Manipur." Support the statement by giving one point each.

    2

23. "Manipur has entered into an age of transport revolution". Varify the statement with two supportive points. 2

24. On the outline map of India provided, therein mark and label the following : 1+1=2

   (a) Queen of the Arabian Sea

   (b) Lokpriya Gopinath Bordoloi Airport

Answer Question Nos. 25 to 31 in about 50 words each.

25. What are the main ideas developed by Welfare, Radical and Behavioural schools of Thought on Human Geography. 3

26. Mention any three aspects of meaningful life as postulated by Dr. Mohabub-ul-Haq in context of Human Development. 3

27. Explain how efficiency of the Ocean transport has increased now-a-days. 3

28. Classify the towns of India based on different stages of their evolution. 3

29. Mention three objectives of the Namami Gange Programme launched in India. 3

30. " The use of Optic Fibre Cable (OFC) is a major breakthrough in the field of communication". Support the statement by stating three advantages of it. 3

31. "An individual farmer who has 4.5 acres of cultivable land practised tripple cropping this year due to the availability of adequate rainfall and other inputs". Calculate the cropping intensity of the farmer. 3

Answer Question Nos. 32 to 34 in about 150 words each.

32. Explain any five characteristic features of Intensive Subsistence agriculture practised in monsoon lands of Asia. 5

Or

Explain any five factors influencing the location of traditional large scale industries at a place.

33. Discuss briefly the five main sources of non-conventional energy sources in India.

5

Or

Discuss any five changes initiated in Industrial sector under the New Industrial Policy 1991.

34. "Development in the field of science and technology has significantly contributed in bringing about revolution in the field of communication ." Elucidate. 5

"The nature of India's foreign trade has changed over the years." Justify the statement by giving five points.

———————