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Roll No. : 24282698

UGM-20494

**NEP Based Integrated Course
(Semester-II) Examination, 2023-24**

MUSIC (SITAR)

[Paper : NEPSC-005]

Time : Three Hours]

[Maximum Marks : 60

Note : Attempt **any five** questions. All questions carry **equal** marks.

किन्हीं पाँच प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

1. Write Thah and Dugun Layakari in any one Taal of the following :

निम्नलिखित में से किसी एक ताल को ठाह और दुगुन लयकारी में लिखिए :

(a) Teen Taal

तीन ताल

(b) Roopak Taal

रूपक ताल

2. Explaining the importance of Alankar in Music. Write any four Alankar in ascending and descending order.

संगीत में अलंकार के महत्व को समझाते हुए किन्हीं चार अलंकारों को आरोह एवं अवरोह क्रम में लिखिए।

3. Write a short note about classification of instrument.

वाद्य वर्गीकरण के बारे में संक्षेप में लेख लिखिए।

4. Give brief introduction of your instrument.

अपने वाद्य का संक्षिप्त परिचय दीजिए।

5. Write brief biography of any one exponent of Sitar.

सितार के किसी एक कलाकार का संक्षिप्त जीवन परिचय लिखिए।

6. What is 'Gharana'? Write in brief about any one Gharana of Sitar.

‘घराना’ क्या है? सितार के किसी एक घराने के बारे में संक्षेप में लिखिए।

7. What is 'Gat'? Write brief note about Razakhari Gat or Maseet Khani Gat.

‘गत’ क्या है? रजाखानी गत या मसीतखानी गत के बारे में संक्षिप्त लेख लिखिए।

8. Write a short about **any one** of the following Pair.

निम्नलिखित में से किसी एक जोड़ी के बारे में संक्षेप में लिखिए:

(a) Vaadi-Samvadi

वादी-संवादी

(b) Aroh-Avroh

आरोह-अवरोह

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UGM-20496

**NEP Based Integrated Course
(Semester-II) Examination, 2023-24**

MUSIC VOCAL

[Paper : NEPSC-007 (Elective)]

(Skill Based)

Time : Three Hours]

[Maximum Marks : 60

Note : This question paper is divided into five units. Attempt one question from each unit. All questions carry equal marks.

यह प्रश्न-पत्र पाँच इकाइयों में विभक्त है। प्रत्येक इकाई से एक प्रश्न का उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

Unit-I / इकाई-1

1. Write the full description of any two Ragas of the following:

निम्नलिखित में से किन्हीं दो रागों का पूर्ण परिचय लिखिए :

(a) Raag Bhairav

राग भैरव

(b) Raag Todi

राग तोड़ी

(c) Raag Kaafi

राग काफी

2. Compare the following pairs of Ragas :

निम्नलिखित रागों की जोड़ियों की तुलना कीजिए :

Raag Bhairav – Raag Ramkali

राग भैरव – राग रामकली

Unit-II / इकाई-II

3. Write the notation of Drut Khayal in any Raga of your course.

अपने पाठ्यक्रम के किसी राग में द्रुत ख्याल की स्वरलिपि लिखिए।

4. Write the notation of Vilambit Khayal in any Raga of your course.

अपने पाठ्यक्रम के किसी राग में विलम्बित ख्याल की स्वरलिपि लिखिए।

Unit-III / इकाई-III

5. Write Layakari of Dugun, Tigun and Chougun of any one Taal from your syllabus.

अपने पाठ्यक्रम से किसी एक ताल में दुगुन, तिगुन एवं चौगुन की लयकारियाँ लिखिए।

6. Express your views on 'Importance of Music in Human life.

“मानव जीवन में संगीत का महत्व” विषय पर अपने विचार व्यक्त कीजिए।

Unit-IV / इकाई-IV

7. Explain any two of the following :

निम्नलिखित में से किन्हीं दो को समझाइये :

(a) Shruti

श्रुति

(b) Swar

स्वर

(c) Thaat

थाट

8. Identify the following Swar-Samooh and write the name and Aaroh-Avroh and Pakad of Ragas :

निम्नलिखित स्वर समूह को पहचानकर रागों का नाम तथा आरोह, अवरोह एवं पकड़ लिखिए :

(a) Ga Ma Dha Dha Pa, Ga Ma Re Re Sa

ग म ध ध प, ग म रे रे सा

(b) Sa Re Ga Ma Ga, Re Ga Re Sa

सा रे ग म ग रे ग रे सा

Unit-V / इकाई-V

9. By writing the biography of Pt. Bhimsen Joshi or Swami Hari das. Write their contribution in Music.

पं. भीमसेन जोशी या स्वामी हरिदास का जीवन परिचय देते हुए संगीत में उनके योगदान लिखिए।

10. Write detail note on **any two** from the following :

निम्नलिखित में से किन्हीं दो पर विस्तृत टिप्पणी लिखिए :

(a) Gwalior Gharana

ग्वालियर घराना

(b) Kirana Gharana

किराना घराना

(c) Agra Gharana

आगरा घराना

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UGM-20493

**NEP Based Integrated Course
(Semester-II) Examination, 2023-24**

MUSIC (TABLA)

[Paper : NEPSC-004]

Time : Three Hours]

[Maximum Marks : 60

Note : This question paper has **eight** questions. Attempt **any five** questions in all. All questions carry equal marks.

इस प्रश्न-पत्र में आठ प्रश्न हैं। किन्हीं पाँच प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

1. What do you mean by percussion instruments?
Describe.

अवनद्र वाद्यों से आप क्या समझते हैं? वर्णन कीजिए।

2. Write about any five alphabets of Tabla.

तबला के किन्हीं पाँच वर्णों के विषय में लिखिए।

3. Throw light on the origin of Tabla.

तबला की उत्पत्ति पर प्रकाश डालिए।

4. Describe the parts of Tabla.

तबला के अंगों का वर्णन कीजिए।

5. Write in brief about - Sitar, Flute, Harmonium and Manjeera.

सितार, बाँसुरी, हारमोनियम एवं मंजीरा के विषय में संक्षेप में लिखिए।

6. Define Gharana and write the name of any two Gharanas of Tabla.

घराना को परिभ्राष्ट कीजिए व तबला के किन्हीं दो घरानों के नाम लिखिए।

7. Give an introduction of Teen-Taal.

तीन-ताल का परिचय दीजिए।

8. Write a biography of any Tabla Maestro.

किसी तबला वादक की जीवनी लिखिए।

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UGM-20485

**NEP Based Integrated Course
(Semester-II) Examination, 2023-24**

**NATION BUILDING AND
SOCIAL SERVICES**

[Paper : NEPFC-001]

Time : Three Hours]

[Maximum Marks : 60

Note : Attempt **any five** questions. **All** questions carry **equal** marks.

किन्हीं पाँच प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

1. Write about the objectives and organizational structure of defence services of India.

भारत की रक्षा सेवाओं के उद्देश्यों और संगठनात्मक संरचना के बारे में लिखिए।

2. Write a detailed note on Indo-China War of 1962.

भारत-चीन युद्ध 1962 पर एक विस्तृत टिप्पणी लिखिए।

3. Write a detailed note on Kargil War.

कारगिल युद्ध पर विस्तार से टिप्पणी लिखिए।

4. What were the reasons for the failure of First War of Independence (1857) against Britisher?

अंग्रेजों के विरुद्ध प्रथम स्वतंत्रता संग्राम (1857) की विफलता के क्या कारण थे?

5. What do you understand by National Integration?
Describe the various measures to achieve National Integration.

राष्ट्रीय एकता से आप क्या समझते हैं? राष्ट्रीय एकता प्राप्त करने के विभिन्न उपायों का वर्णन कीजिये।

6. Write notes on **any two** of the following :

निम्नलिखित में से किन्हीं दो पर टिप्पणियाँ लिखिए :

(a) Field Marshal Sam Manekshaw

फील्ड मार्शल सैम मानेकशॉ

(b) Personal Hygiene

व्यक्तिगत स्वच्छता

(c) POCSO Act

पॉक्सो अधिनियम

(d) Human Trafficking

मानव तस्करी

7. Write notes on **any two** of the following :

निम्नलिखित में से किन्हीं दो पर टिप्पणियाँ लिखिए :

(a) Factors affecting National Integration

राष्ट्रीय एकता को प्रभावित करने वाले कारक

(b) Importance of Constitution in maintenance of law and order

कानून और व्यवस्था बनाए रखने में संविधान का महत्व

(c) Factors affecting personality development

व्यक्तित्व विकास को प्रभावित करने वाले कारक

(d) Role of citizen in Nation building

राष्ट्र निर्माण में नागरिक की भूमिका

8. What do you understand by Disaster? What are the different types of Disaster? Discuss the role of disaster management organization in assistance during natural disaster.

आपदा से आप क्या समझते हैं? आपदाओं के विभिन्न प्रकार क्या हैं? प्राकृतिक आपदा के दौरान सहायता में आपदा प्रबंधन संगठनों की भूमिका पर चर्चा कीजिए।

9. Write notes on **any two** of the following :

निम्नलिखित में से किन्हीं दो पर टिप्पणियाँ लिखिए :

- (a) Importance and ways of energy conservation

ऊर्जा संरक्षण का महत्व और तरीके

- (b) Government initiatives for social upliftment of women

महिलाओं के सामाजिक उत्थान के लिए सरकारी पहल

- (c) Importance of team work

टीम वर्क का महत्व

- (d) Bhagat Singh as National Leader

भगत सिंह राष्ट्रीय नेता के रूप में

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UGM-20481

**Integrated BCA & MCA (Semester-II)
Examination, 2023-24**

DATA SCIENCE

[Paper : Third (IDS-004)]

('C' Programming with
Data Structures)

Time : Three Hours]

[Maximum Marks : 60

Note : Attempt all questions. All questions carry equal marks.

1. (a) Explain the main components of a computer system and their functions. What are input and output devices? Provide examples of each. [6]

- (b) What is an operating system? Describe its main functions. Discuss the role of an operating system in managing hardware resources. [6]

OR

- (a) Explain the process of compiling a program. What are the stages involved? Discuss the importance of error detection and error reporting in the compilation process. [6]
- (b) Define an algorithm. What are the characteristics of a good algorithm? Write an algorithm and draw a flowchart to represent the process of calculating the factorial of a number. [6]
2. (a) Define an array and explain its significance in C programming. Discuss the concept of matrix representation using 2-dimensional arrays in C. Write a C program to perform the addition of two matrices. [6]
- (b) Describe the common string operations available in C (e.g., length, copy, concatenate). Write a C program to concatenate two strings without using the strcat function. [6]

OR

(a) What is a structure in C? How does it differ from an array? How do you initialize a structure in C? Provide an example. Write a C program to define a structure student with members name, roll_no, and marks, and then access these members.

[6]

(b) Define a union in C and explain its key characteristics. Write a C program to demonstrate how a union can be used to store different data types in the same memory location.

[6]

3. (a) What is a linked list? How does it differ from an array? Write a C program to implement a singly linked list and perform basic operations like insertion and deletion. [6]

(b) What is garbage collection in the context of linked lists? Why is it necessary? Explain the concept of memory compaction and how it is related to linked lists. [6]

OR

- (a) What is a function declaration? How is it different from a function definition? Write a C program to demonstrate passing parameters by value and by reference. [6]
- (b) What is recursion? Provide an example of a recursive function in C. Explain the base case and recursive case in the context of recursion. Write a C program to calculate the factorial of a number using recursion. [6]
4. (a) Write a C program to implement a stack using an array. Describe the push and pop operations in the context of a stack. Explain the conditions for stack being empty and full. How are these conditions checked in an array implementation? [6]
- (b) Explain how a queue can be represented using an array. What are the drawbacks of this representation? Write algorithms for the enqueue and dequeue operations in a queue implemented using an array. [6]

OR

- (a) Write an algorithm to convert an infix expression to a postfix expression using a stack. Convert the following infix expression to postfix showing each step in stack :

$K + L - M * N + (O \wedge P) * W / U / V * T + Q$ [6]

- (b) What is a circular queue? How does it differ from a regular queue? Write a C program to implement a circular queue using an array. Explain the advantages of using a circular queue over a linear queue. [6]

5. (a) Define a complete binary tree. How does it differ from a full binary tree and a perfect binary tree? Write an algorithm to check if a given binary tree is complete. [6]

- (b) How can binary trees be used to represent algebraic expressions? Explain the process of constructing a binary tree for the following algebraic expression : [6]

$(a + b) * (c - d) (a + b) * (c - d) (a + b) * (c - d)$

OR

- (a) How can a binary tree be represented using arrays? Explain with an example. Write a C program to implement a binary tree using linked representation. Compare the advantages and disadvantages of array representation versus linked representation of binary trees. [6]
- (b) Explain the properties of a binary tree in terms of the maximum number of nodes at each level. Discuss the importance and applications of binary trees in computer science. [6]

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UGM-20482

Integrated BCA and MCA (Semester-II) Examination, 2023-24

DATA SCIENCE

[Paper : Fourth (IDS-005)]

(Operating System)

Time : Three Hours]

[Maximum Marks : 60

Note : Attempt all questions. All questions carry equal marks.

1. (a) What is need of Operating System? What kind of difficulties one can face in absence of operating system? [6]

- (b) Differentiate among the following operating system : [6]
 - (i) Multiprogramming

(ii) Multiprocessing

(iii) Time sharing

OR

(a) Explain any two structures of Operating System with suitable diagram. [6]

(b) Explain the difference among short term, medium term and long-term schedulers with suitable diagram. [6]

2. (a) Briefly explain the following concepts : [6]

(i) Preemptive and non-preemptive scheduling algorithm

(ii) Context Switch

(b) What are different modes in which program can execute? Explain in brief. [6]

OR

(a) Define Virtual Machine with suitable diagram. Discuss the benefits of virtual machine over normal machine. [6]

- (b) Define Independent and Cooperating processes.
Describe in brief the two fundamental models of inter process communication. [6]
3. (a) What problem can occur in priority based scheduling? How can it be handled? Explain with suitable example. [6]
- (b) Consider the following set of processes with arrival time in millisecond. Find out average waiting time using preemptive priority based scheduling. [6]

Process Id	Arrival Time (msec)	CPU Burst Time (msec)	Priority
P ₁	0	11	2
P ₂	5	28	0
P ₃	12	2	3
P ₄	2	10	1
P ₅	9	16	4

OR

- (a) What is Critical Section Problem? What are the requirements that a solution of critical section problem must satisfy? [6]
- (b) Discuss the types of Semaphore. What are the main problems in semaphore? [6]
4. (a) Discuss the producer consumer problem. Explain using an example. [6]
- (b) Write short notes on following : [6]
- (i) Locality of Reference
- (ii) Race Condition

OR

- (a) Describe the following terms : [6]
- (i) Throughput
- (ii) Turnaround Time
- (iii) Waiting Time
- (b) What is Resource Allocation Graph? How it can be used in deadlock detection? [6]

5. (a) List the methods used for deadlock handling.
Discuss any one in detail. [6]
- (b) Discuss the concept of Thrashing. How it is related with degree of multiprogramming? How it can be avoided? [6]

OR

- (a) Consider the following page reference strings :
7 0 1 2 0 3 0 4 2 3 0 3 1 2 0

How many page faults would occur in case of FIFO page replacement algorithm? Assuming number of frames is three and all the frames are initially empty. [6]
- (b) Consider a system in which logical address has 33 bits, physical address has 24 bits and page size is 24 KB. Calculate size of process, size of primary memory, number of pages, number of frames and number of entries in the page table. [6]

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UGM-20483

**Integrated BCA & MCA (Semester-II)
Examination, 2023-24**

DATA SCIENCE

[Paper : Fifth (IDS-006)]

(Foundations of Data Science)

Time : Three Hours]

[Maximum Marks : 60

Note : Attempt all questions. All questions carry equal marks.

1. (i) What are variables in Python? What are rules for naming variables in Python? [6]
- (ii) With example, discuss different types of built-in data types in Python. [6]

OR

- (i) What are Python Functions? Write a Python program to 'create a function' and 'call a function'. [6]

- (ii) With example, discuss the use of Lists, Dictionaries and Tuples in Python. [6]
2. (i) What do you mean by Data Science? What is the importance of data science in day-to-day data analysis? [6]
- (ii) Discuss Descriptive analysis, Diagnostic analysis, Predictive analysis and Prescriptive analysis of data in Data Science. [6]
- OR**
- (i) With example, write about how Data Science helps in revolutionize businesses? [6]
- (ii) Discuss Classification, Regression and Clustering techniques used by data scientists in computing system. [6]
3. (i) What is use of Python NumPy library in Data Science? Write a python program to create an array list of eight elements. [6]
- (ii) Discuss the use of Pandas Library in Data Science. With a program show the difference between Pandas series and NumPy array. [6]

OR

- (i) What is the importance of SciPy Library in Python? Write about the set of mathematical constants offered by SciPy. [6]
- (ii) What is NumPy Vectorization? Take a NumPy array with five elements {2,3,5,8,9} and add 10 to each element of the array using NumPy Vectorization. [6]
4. (i) What is Data Cleaning? Why is data cleaning important in Data Science? [6]
- (ii) Discuss different functionalities that Data Wrangling deals with in Data Science. [6]
- OR**
- (i) What is Data Visualization? What are advantages of data visualization? [6]
- (ii) What is importance of Aggregation and Grouping of data in Data Science? [6]
5. (i) What is Exploratory Data Analysis? Discuss the goals of exploratory data analysis. [6]

(ii) What are different types of Exploratory Data Analysis? [6]

OR

(i) What is Regression? Write about Linear, Polynomial and Logistic regression. [6]

(ii) What is Classification? What are applications of classification in Data Science. [6]

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