

Principles of Operating System**Instructions:**

- 1) **All questions are compulsory.**
 - 2) Mixing of sub questions is not allowed.
 - 3) Write in clear, legible, writing.
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- Q1) Attempt any two: (10)
- A) Explain the role of an Operating System in a computer system.
 - B) List and explain any five services provided by an Operating System.
 - C) What is a Process Control Block (PCB)? What information does it contain?
 - D) Explain different multithreading models with diagrams.
- Q2) Attempt any two: (10)
- A) Describe the working of semaphores. Differentiate between binary and counting semaphores.
 - B) Define virtual memory. Why is it needed?
 - C) Explain demand paging and the concept of page faults.
 - D) Describe the booting process and disk formatting.
- Q3) Attempt any two: (10)
- A) What are the different file access methods? Give suitable examples.
 - B) Explain various file allocation methods (contiguous, linked, indexed).
 - C) How is free space managed in file systems? Explain different techniques.
 - D) What is thrashing? How can it be prevented?

Instructions:

- 1) All questions are **compulsory**.
- 2) Mixing of sub questions are not allowed.
- 3) Write in clear, legible, writings.

Q I Attempt any two : - (10)

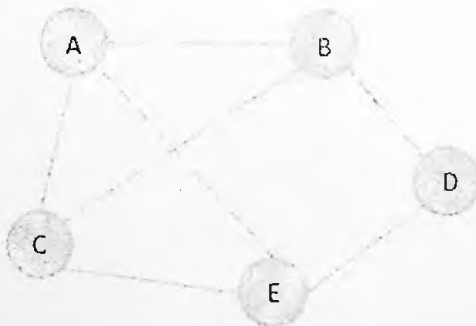
- A) What is an Abstract Data Type (ADT)?. Explain in brief.
- B) Differentiate between primitive and non-primitive data types with examples.
- C) What is a doubly linked list. How does it differ from a singly linked list.
- D) Explain the classification of data structures with examples.

Q II Attempt any two : - (10)

- A) Write a short note on the binary search tree and illustrate your answer with nice diagram.
- B) Distinguish between pre-order and post-order traversal.
- C) What are different types of balanced trees. Explain each one of it in brief.
- D) Explain heaps and state its different types.

Q III Attempt any two : - (10)

- A) Explain the stack and the different operations used in it.
- B) How is deque different from normal queue. Reperesent your answer with a nice diagram.
- C) Distinguish between depth first search (DFS) and breadth first search (BFS).
- D) Write the adjacency matrix for the following graph.



Theory of Computation (NEP)Instructions:

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 - 3) Write in clear, legible, writing.
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Q1) Attempt any two: (10)

- A) Explain uses of Automata
- B) Construct a Moore machine that takes set of all strings over $\{a,b\}$ and count number of occurrence of substring 'baa'.
- C) What is a derivation tree? Explain it with example.
- D) Show that grammar is ambiguous:
 $G : S \rightarrow aB | ab$
 $A \rightarrow aAB | a$
 $B \rightarrow ABb | b$

Q2) Attempt any two: (10)

- A) Explain Turing machine construction techniques
- B) Design Turing machine that accepts $\{a^n b^n \mid n \geq 1\}$
- C) Write a short note on Recursive Enumerable Languages
- D) Write a short note on Linear Bound Automaton and Linear Bound Automaton Model

Q3) Attempt any two: (10)

- A) Construct NFA that accepts set of all strings over $\{0,1\}$ of length 2.
 $\Sigma = \{0, 1\}$, $L = \{00, 01, 10, 11\}$
- B) Find reduced grammar equivalent to the grammar G whose productions are, $S \rightarrow AB | CA$, $B \rightarrow BC | AB$, $A \rightarrow a$, $C \rightarrow aB | b$
- C) Write Arden's Theorem.
- D) What are the languages accepted by Linear Bound Automaton.

Max Time: 1 hrs

SY IT/CS Semester III

Max Marks: 30

Basic sectors of Indian Economy

Instructions:

1. All questions are **compulsory**.
 2. Mixing of sub questions is not allowed.
 3. Write in clear, legible, writing.
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Q.1 Answer the following Questions. (any two) (15 MARKS)

- a) Write any 10 Different challenges faced by Indian Agriculture.
- b) Reforms of MSME.
- c) State importance and challenges of service sector in India.

Q.2 Answer the following Questions. (any two) (15 MARKS)

- a) Write a short note on big data and ML.
- b) What is a mobile wallet ? state different types of mobile wallets
- c) What is blockchain? State advantages of blockchain.

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NA2325

द्वितीय वर्ष/सेमिस्टर - III / AEC- हिंदी भाषा व्यावहारिक प्रयोग
(Hindi Language Practical Usage)

समय : 01 घंटे

अंक : 30

सूचना: 1) निम्नलिखित तीन प्रश्नों में से कोई भी दो प्रश्नों के उत्तर लिखिए
2) दायीं ओर के अंक गुण दर्शाते हैं।

प्रश्न 1. निम्नलिखित प्रश्नों के उत्तर लिखिए

15

अ) शब्दभेद का सामान्य परिचय देते हुए सर्वनामों प्रकाश डालिए ?

आ) मौलाना आज़ाद स्कूल में सहायक कंप्यूटर शिक्षक पद हेतु आवेदन प्रस्तुत कीजिए?

प्रश्न 2. निम्नलिखित प्रश्नों उत्तर लिखिए

15

अ) राजभाषा हिंदी की संवैधानिक स्थिति एवं महत्व पर अपने शब्दों में प्रकाश डालिये ?

आ) कारक का अर्थ एवं प्रकार बताकर विराम चिन्हों पर प्रकाश डालिए ?

प्रश्न 3. निम्नलिखित प्रश्नों के उत्तर लिखिए

15

अ) स्वर एवं व्यंजन को परिभाषित करते हुए हिंदी वर्णमाला लिखिए ?

आ) राजभाषा विभाग में आर टी आई (RTI) के तहत हिंदी भाषा के प्रयोग एवं स्थिति के संदर्भ में जानकारी का प्रारूप बनाइये ?

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SY SEM-III/AEC-URDU

Urdu Communication Skill- II

Timing: 01 hours

Marks: 30

Note:- Attempt Any Two

ہدایات:

1. تین سوالات میں سے کسی دو کے جواب مطلوب ہیں۔
2. تمام سوالات کے نمبر مساوی ہوں گے۔
3. ہر جواب سے پہلے متعلقہ سوال ضرور نقل کریں۔
4. ہر جواب نئے صفحہ سے شروع کریں۔

- 15 سوال نمبر 1): -اردو گنتی بندسوں اور عبارتوں میں بیس سے اسی تک لکھیے۔
- 15 سوال نمبر 2): -اردو ضرب الامثال کی وضاحت کرتے ہوئے اس کی چند مثالیں پیش کیجیے۔
- 15 سوال نمبر 3): -شاکر و تاثیر کے اصول بیان کرتے ہوئے اس کی کم سے کم بچیں مثالیں دیجیے۔

NSS

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NATIONAL SERVICE SCHEME

NASL2325

SEMESTER III

Time: 1:00 Hours

Total Marks: 30

1. All questions are compulsory.
2. Figure to the Right indicates full marks.
3. Draw neat labeled drawings wherever necessary.

Q.1) Rewrite the following by choosing the correct options given below
06 marks.

1. Who worked for the upliftment of widows and helped pass the Widow Remarriage Act?

- a) Swami Vivekananda
- b) Ishwar Chandra Vidyasagar
- c) Raja Ram Mohan Roy
- d) Jyotiba Phule

2. Who is known as the 'Mother of Indian Feminism'?

- a) Annie Besant
- b) Sarojini Naidu
- c) Savitribai Phule
- d) Pandita Ramabai

3. The Servants of India Society was founded by whom?

- a) Mahatma Gandhi
- b) Gopal Krishna Gokhale
- c) Dadabhai Naoroji
- d) Bal Gangadhar Tilak

4. Who founded the Theosophical Society in India?

- a) Annie Besant
- b) Sarojini Naidu
- c) Pandita Ramabai
- d) Tarabai Shinde

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Co-curricular

CC

NASC.2325

Paper: Indian theatre: Classical roots and contemporary expression

Marks: 30

Time: 1 Hour

Q.1. Fill in the blanks

(6 Marks)

1. **Bharat Muni** has written an ancient text which is also known as fifth Veda,.....
2. **Bhayanak** Rasa is refers to..... Emotion.
3. "**Urubhanga**" famous drama is written by.....
4. National School of Drama is located in.....city.
5. **Nukkad Natak** is also known asplay.
6.theatre is profit oriented.

Q. 2. Descriptive questions (Attempt any two out of four) (6 Marks)

1. Write a note on **Natyashastra**.
2. Describe eight **Rasa** in the detail.
3. Write a note on Contemporary Indian drama.
4. Explain the contribution of Sanskrit drama in the development Indian drama.

Q.3. Descriptive questions (Attempt any two out of four) (6 Marks)

1. Write a detail note on **Abhinaya**.
2. What are the major key sections of **Natyagriha**.
3. Write a note on structure of good play.
4. Explain impact of **Natyashastra** on Indian Performing Arts.

Q.4. Descriptive questions (Attempt any two out of four) (6 Marks)

1. Describe **Bhasa's** contribution in Indian drama.
2. Explain **Kalidasa's** drama writing style.
3. Write a note on folk Drama.
4. What is plot structure?

Q.5. Descriptive questions (Attempt any two out of four) (6 Marks)

1. What is commercial Theatre? Write in detail.
2. Write a note on **Nukkad Natak**.
3. Write characteristics of One act play.
4. Explain importance of children theatre.

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NASC 2325

Time: 1 hr

DLLE SEM-1

Total Marks: 30

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate maximum marks.

Q.1. Rewrite the following statement by choosing the correct alternative given below. (06 Marks)

1. Nasha Mukti means freedom from _____.
(a) Food Waste (b) Addiction (c) Discipline (d) Civic Sense
2. Civic sense mainly refers to _____.
(a) Using digital tools
(b) Responsible behavior in society
(c) Stress management
(d) Wasting food
3. The campaign "Digital India" was launched in the year _____.
(a) 2005 (b) 2010 (c) 2015 (d) 2019
4. Stress can be managed effectively through _____.
(a) Meditation and exercise
(b) Food wastage
(c) Lack of sleep
(d) Irregular routine
5. The slogan "Stop Food Wastage. Start Food Sharing" promotes _____.
(a) Discipline (b) Addiction (c) Civic sense (d) Stress management
6. A disciplined student is one who _____.
(a) Avoids homework
(b) Maintains punctuality and respect
(c) Wastes resources
(d) Encourages addiction

Q.2. Write Short Notes on (Any Two out of Four):

(06 Marks)

- a) Importance of Nasha Mukti in Youth Development
- b) Role of Discipline in Building Personality
- c) Food Wastage and its Impact on Society
- d) Benefits of Stress Management Techniques

Q.3. Answer the following questions (Any Three out of Five):

(18 Marks)

1. Explain the importance of Nasha Mukti Abhiyan in building a healthy nation.
2. Analyze how discipline and civic sense contribute to the progress of society.
3. Discuss practical measures to stop food wastage at home and in public functions.
4. Evaluate different ways to manage stress among students.
5. Explain the objectives and advantages of Digital India campaign.

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NASC 2325

SECOND YEAR SEMESTER III NEP EXAMINATION

Subject: Introduction to Sports Training & Tests and Measurement

Roll Number: _____ Sup Sign: _____

Class & Division: _____

Duration: 1 Hr.

Marks: 30

Instruction:

- For MCQs, tick/mark the correct option in the paper.
 - For True/False, write "True" or "False" in the box given.
 - For Match the Column, draw arrows from Column A to Column B.
-

A. Multiple Choice Questions (Any 10 out of 12)

(10)

1. Off-season training mainly focuses on:
a) Peak performance b) Fixing weaknesses
c) Match tactics d) Competition preparation
2. Which of the following is NOT an objective of sports training?
a) To improve technical skills b) To develop mental strength
c) To promote laziness d) To prevent injuries
3. Who among the following helps athletes with injuries?
a) Coach b) Nutritionist
c) Physiotherapist d) Psychologist
4. Which is NOT a component of physical fitness?
a) Strength b) Endurance c) Flexibility d) Reading skill
5. Interval training is used primarily to develop:
a) Flexibility b) Speed endurance c) Balance d) Muscle mass
6. The principle of continuity in training means:
a) Training randomly b) Training should be regular and consistent
c) Training only once a week d) Training without rest

7. A training plan that considers a person's physical, mental, emotional, and lifestyle aspects is known as:
- a) A Person-Centred Approach
 - b) A Holistic / Integrated Approach
 - c) Periodization
 - d) Training Load
8. Which component of physical fitness is measured using a push-up test or grip strength test?
- a) Cardio endurance
 - b) Balance
 - c) Strength
 - d) Flexibility
9. The ability to change direction quickly is known as:
- A) Speed
 - B) Strength
 - C) Agility
 - D) Balance
10. The principle that emphasizes the need to customize training for each athlete is called:
- A) Principle of Specificity
 - B) Principle of Individualization
 - C) Principle of Progression
 - D) Principle of Overload
11. The key idea behind the Overload Principle is that you must:
- A) Always train at a low intensity to avoid injury
 - b) Push your body beyond its normal limits to see progress
 - c) Focus only on the skills of your sport
 - d) Train alone without a coach
12. How many players are there in a standard basketball team on the court?
- a) 5
 - b) 6
 - c) 7
 - d) 11

B. True / False (1 mark each × 10)**(10)**

1. Cricket is played with a round ball and a flat bat. []
2. Overload means pushing the body beyond its normal limits. []
3. Medical history is not important for designing safe training schedules. []
4. A person-centered approach means using the same training plan for everyone. []
5. Beginners should start with low-to-moderate training intensity. []
6. Sports training is defined as a random and unplanned form of exercise. []
7. Poor technique in a sport can lead to an increased risk of injury. []
8. A cricketer practicing batting daily is an example of sports training. []
9. If an athlete stops training, their muscular strength can begin to decrease in as little as 2-3 weeks. []
10. Varying your training routine can help prevent boredom and reduce the risk of overuse injuries. []

C. Match the Column (1 mark each × 10)

(10)

1.

Column A	Column B
1. Sprint	a) Short, fast running race
2. Progression	b) Train gradually, build up slowly
3. Coordination	c) Timing movements
4. Hockey	d) National sport of India
5. Current Health	e) Person's present physical condition

2.

Column A	Column B
1. Medical History	a) Family illness, past injuries
2. Level of Fitness	b) Strength, Endurance, Flexibility
3. Person-Centred Approach	c) Customized training plan
4. Roger Federer	d) Tennis Legend
5. FIFA World Cup	e) Football Tournament