Sr. No. of Question Paper : 1024   A

Unique Paper Code   : 32173909

Name of the Paper   : SEC – Pharmaceutical chemistry

Name of the Course   : **B.Sc. (Hons.) / B. Sc. (Prog.)**

Semester   : IV / VI

Duration : 2.5 Hours   Maximum Marks : 38

Instructions for Candidates

1. Write your Roll No., Name of the paper, Course, Semester, and Date of examination on the first page of answer sheet.

2. Attempt any **four** questions in all.

1. Answer the following :   (3,3,3.5)

   (i) Describe drug modification and its role in modern drug development.

   (ii) Differentiate between drug and poison.

   (iii) Define Analgesics agents using suitable examples and describe their mode of action.

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2. Answer the following : (3,3,3.5)

(i) What are Anti-bacterial agents? Give an example along with its structure.

(ii) What do you understand by the terms Lead compound and Lead modification?

(iii) How is aerobic fermentation different from anaerobic fermentation? Explain with suitable example.

3. Answer the following : (3,3,3.5)

(i) Draw the structure of Penicillin and Ibuprofen.

(ii) What is a pharmaceutical aid? Explain with suitable examples.

(iii) How is paracetamol synthesized? Write the chemical reactions involved.

4. Answer the following : (3,3,3.5)

(i) What is pharmacophore? Discuss its role in pharmaceutical chemistry.

(ii) Match the following :

    (i) Aspirin   (a) Antileprosy drug

    (ii) Glyceryl trinitrate   (b) CNS agent

    (iii) Diazepam   (c) Tuberculosis

    (iv) Streptomycin   (d) Scurvy

    (v) Dapsone   (e) Cardiovascular agent

    (vi) Vitamin C   (f) 2-Acetoxybenzoic acid

(iii) Explain the synthesis of citric acid using fermentation process.

5. (a) Differentiate the following **(Attempt any two)**

                                   (3,3,3.5)

    (i) Antibiotic and Antiallergic agent

    (ii) CNS and Cardiovascular agents

    (iii) Potency and Efficacy

(b) Define Antifungal agents and discuss their mode of action.

6.   (a) Write short note on any **three** :   (3,3,3,0.5)

     (i) Bioisosterism

     (ii) Side effect of Acyclovir

     (iii) Sulphadrugs

     (iv) Antiviral agent

   (b) Write the structure of Chloromycetin.

13/5/22 (M)

2P

[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 1025   A

Unique Paper Code   : 32173910

Name of the Paper   : SEC- Chemistry of Cosmetics
                             & Perfumes

Name of the Course   : B.Sc. (Hons.) / B. Sc. (Prog.)

Semester   : IV / VI

Duration : 2.5 Hours   Maximum Marks : 38

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt any **four** questions.

3. **All** questions carry equal marks.

1. (a) Is using sunscreen truly risk-free?

   (b) What is the differences between toothpaste and tooth powder? Why is toothpaste preferred over tooth powder?

P.T.O.

(c) Classify cosmetics based on their physical forms. (2.5,3.5,3.5)

2. (a) Explain the function of surfactants and thickeners in the production of shampoo?

(b) Write the full form of the following :

(i) PCPC

(ii) QS

(iii) SPF

(iv) FDA

(c) What factors distinguishes baby powder from talcum powder? (3,4,2.5)

3. (a) What are the ideal characteristic of a good nail polish ?

(b) What is synthetic Flavouring agents? Are artificial flavours safe?

    (c) What are some of the most common treatments for reducing or eliminating body odour?

                                         (3.5,3.5,2.5)

4. (a) Explain the changes in the composition of face powder depending on dry, normal and oily skin.

    (b) What exactly is sandalwood oil? Write down the cosmetic properties and applications of sandalwood oil.

    (c) What roles nitrocellulose, ethyl cellulose, and benzoin play in nail lacquers?   (3.5,3.5,2.5)

5. (a) Explain the role of ingredient Poly Vinyl Pyrrolidone in the formulation of hair spray?

    (b) What is shaving cream? What are the characteristics of good shaving cream?

    (c) Write the factors which make sunscreen effective?   (3.5,3.5,2.5)

6. Write short notes on :

   (a) Cold cream and Vanishing cream

   (b) Type of hair dyes

   (c) Method of preparation of lipstick   (3.5,3,3)

3

P

Your Roll No...............

Sr. No. of Question Paper : 1028   A

Unique Paper Code   : 32343407

Name of the Paper   : Android Programming (SEC)

Name of the Course   : **B.Sc. (H) Computer Science**

Semester   : IV

Duration : 2 Hours 30 Minutes   Maximum Marks : 25

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. **Section A** is compulsory.

3. Attempt any **3** questions from **Section B**.

4. Parts of a question must be answered together.

SECTION A

(Compulsory)

1. (a) Write the usage of weightSum and layout_weight attribute used in Linear layout.   (2)

    (b) The layout manager provides common attribute layout width and layout height for views. Is there

P.T.O.

any difference between match parent and Odp value used for these attributes? (2)

(c) Which method is used to register a context menu to a ListView item? Explain Briefly. (2)

(d) Briefly explain the terms density independent pixel (dp) and Scale independent pixel (sp). (2)

(e) Write java code for the following :

   (i) Array adapter

   (ii) Popup Menu (2)

SECTION B

(Attempt any 3 questions)

(Parts of a question must be answered together)

2. (a) What do you understand by the term Android Activity stack? Explain any two types of launch modes available in Android, excluding standard launch mode. (2.5)

(b) What do you understand by the term instance state of an activity? Write Java code to explain how it

can be saved and restored. Use appropriate lifecycle methods to support your answer.

(2.5)

3. Write a Java class of your choice which should have at least three data members, one for the data type Integer and two Strings. Write Java code to initialize this class instance. Send this class instance using a parcel to another activity on click of a submit button. (5)

4. Write Java code for an android application to trigger a notification for android SDK versions lower than Oreo with the following details :

   • Channel ID: ANDROID_EXAM CHANNEL

   • Content Title: Broadcast Notification

   • Content Text: Hello   (5)

5. How do you return results from an activity? Write java code for implementing the same.
(5)

6. Write Java code for an android activity which contains a button. On click of this button trigger a numeric

counter from 0 to 100, on a new thread of runnable interface. The counter should increment the value after every 250 milliseconds. (5)

7. Write Java code to create an android application for the given layout, which uses Contacts content provider to fetch the phone no of user "AMIT" from the contacts and display it on a TextView. Display "No record found" if no such contact exists. (5)

(Note: for API 23 and above runtime permission is required)
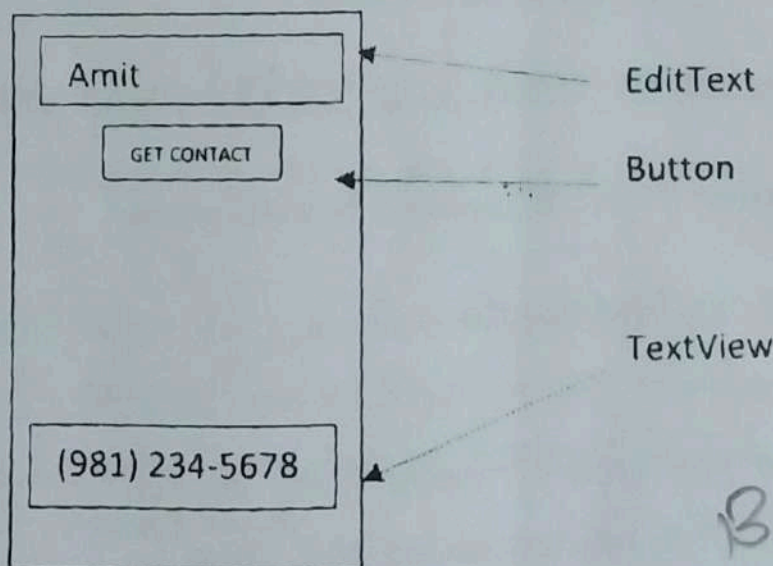
[This question paper contains 8 printed pages.]

P

Your Roll No...............

Sr. No. of Question Paper : 1075

Unique Paper Code : 32353401

Name of the Paper : SEC-2 Computer Algebra Systems and Related Softwares

Name of the Course : B.Sc. (Hons.) Mathematics

Semester : IV

Duration : 2 Hours   Maximum Marks : 38

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. There are **six** questions in all.

3. Q1. and Q4 are compulsory. Attempt any two questions from the rest.

UNIT – 1 (CAS)

Note : The answers should be written in only **one** of the CAS:Mathematica/MATLABMaxima/Maple or any other.

P.T.O.

1.   Fill in the blanks : (Any ten)   (10)

(a) Numerical value of $\frac{5}{9}$ up to 10 places are given by command _____

(b) Command for Square of a previous output is _____

(c) Command for 100! is _____

(d) The output for ArcTan$[\frac{1}{4}]$ is _____

(e) The command for 7 mod 3 is _____

(f) The command for numeric value of $\sqrt{3}\sqrt{5}$ is _____

(g) Command for numerical approximation to 13^{20} with 15 significant digit is _____

(h) Command for the Table of the squares of the first five positive whole numbers is _____

(i) _____ is used to plot an implicitly defined function.

(j) The command _____ will produce a formatted rectangular array with brackets on the sides.

(k) The symbol _____ will simply multiply corresponding entries in the two matrices.

(1) The command for natural logarithm is ———

2. Answer any **two** parts from the following:

$$(4.5 \times 2 = 9)$$

(a) Define the function $f(x) = \cos 3x + \sin 3x$. Find its derivative and integral between the limits $[0, \pi/3]$ and write the commands for the same.

(b) Write command for sketching the curve:

$$x = 1 + \operatorname{Sin}(t)$$

$$y = 2\operatorname{Cos}(2t), \quad \{t, 0, 2\pi\}$$

(c) Let $A = \begin{bmatrix} 2 & 4 & 5 \\ 3 & 1 & 8 \\ 7 & 3 & 2 \end{bmatrix}, \quad B = \begin{bmatrix} 7 & 5 & 1 \\ 1 & 4 & 2 \\ 3 & 1 & 2 \end{bmatrix}$

Write command for generating

   (i) Matrix $(A + B)$.

   (ii) Matrix Multiplication of A and B.

   (iii) Pointwise Multiplication of A and B.

(d) Write command for generating graph of the surface:

$$z = e^{\left(\frac{x^2}{2} + \frac{y^2}{2}\right)} \quad \text{for } -5 \le x, \, y \le 5.$$

3.   Answer any **two** parts from the following

                   (4.5·2·9)

    (a) Write a command to find the adjoint of matrix

$$A = \begin{pmatrix} 1 & 1 & 0 \\ 0 & 1 & 1 \\ 1 & 2 & 3 \end{pmatrix}$$

    using determinant and inverse of A and check your answer by finding co-factor matrix of A.

    (b) Write output of the following command

      $s = SparseArray[Table[\{i+1,2\} \rightarrow i^2, \{i,3\}]]$

    and also give the command which describes positions of non zero elements in s.

    (c) Let $S = \{v1, v2, v3\}$ where $v1 = \{1, 2, 3\}$, $v2 = \{1, -1, 1\}$, $v3 = \{4, 5, 9\}$

    Write commands to

      (i) Find nullity of the matrix whose columns are given by vectors in S.

      (ii) Find whether the vector $b = \{1, 2, 5\}$ lies in the span of S.

(d) For the matrix

$$\begin{pmatrix} 1 & 0 & 1 \\ 0 & 1 & 2 \\ 2 & 3 & 1 \end{pmatrix}$$

Write commands

(i) To find eigenvalues and eigenvectors.

(ii) To diagonalize the matrix.

UNIT – 2 (R Programming)

4.   State–whether the following statements are True or False. (Any ten)

(10)

(a) seq (2,10,1) command is used to form a vector 2,3,4,5,6,7,8,9,10.

(b) The command length(frame) gives the number of items in the data frame.

(c) The apply() command enables you to apply a function to columns only of a matrix or data frame.

(d) The command hist() is used for recalling all previous commands.

(e) The data must be all numbers or all characters to form a matrix.

(f) The NA is a special R object and always used as a character.

(g) The quantile () command is to produce 25%, 50%, 75%, 100%.

(h) To access the elements of data objects ,you can use $.

(i) The data frame can not handle mixed data.

(j) The length of the following vector is ,7:

week={Sun,Mon,Tue,Wed,Thu,Fri,Sat,NA}

(k) To combine data samples, you can use cbind() command.

(l) To examine the mean of the third row of a matrix named birds, you can use the command means(birds,[3,]).

5. Answer any two parts from the following :

(4.5·2 9)

(a) (i) Consider the data 1=5,8,3,1,9,2,4,4,7,3. Write a command to remove the values 1,9,2 from the data1

(ii) For the samples:

    sample1: 5, 6, 9, 12, 8

    sample2: 7, 9, 13, 10

    Write the command to make a data frame.

(b) '(i) Write a command to create a pie chart with labels for the following datas :

    data1: 3 5 7 5 3 2 6 8 5 6 9 8

    data2: "Jan" "Feb" "Mar" "Apr" "May" "Jun" "Jul" "Aug" "Sep" "Oct" "Nov" "Dec".

(ii) Find the minimum value of data1.

(c) (i) Using scan command enter the following data:

    vegetables= {carrot, onion, peas, brinjal}

(ii) Put the items in alphabetical order using a command.

(d) (i) Give a command to read a file of data from a disk.

(ii) Write any command that produces multiple values as a result of the data.

Answer any two parts from the following :

                                 (4.5×2=9)

(a) Write commands to evaluate

(i) product of square roots of 30 and 50.

(ii) sum of 3rd and 5th power of pi.

(iii) sum of squares of positive divisors of 3

(b) Write commands to

(i) read character data from the file 'names.csv'.

(ii) enter the names of months of the year having 31 days.

(iii) make a new vector from the vectors obtained in part (i) and (ii).

(c) Write commands to

(i) get the list of objects that end with 'e'.

(ii) to remove the list of all objects having letter 'b' in their name.

(iii) to get the list of all objects starting with either 'a' or 'e'

(d) Write commands to

(i) convert a vector v containing names of days of the week into numeric vector w.

(ii) get the structure of v and w.

(iii) get the structure of all available objects with 'data' in their name.

(3200)

Sr. No. of Question Paper : 1094   A

'Unique Paper Code   : 32223912

Name of the Paper   : Numerical Analysis Theory

Name of the Course   : B.Sc. Physics (Hons) – Skill Enhancement Course

Semester   : IV

Duration : 3 Hours   Maximum Marks : 50

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Question number 1 is compulsory.

3. From the remaining questions attempt any FOUR.

4. Non programmable scientific calculator may be allowed.

1.   (i) Given $y = 0.86432 \times 10^4 + 0.72793 \times 10^{-1}$.

     Calculate the round off error due to (a) chopping
     (b) due to systematic rounding. Also state

P.T.O.

what will be the possible maximum round off error due to (a) chopping and (b) systematic rounding.

(3)

(ii) Give the physical interpretation of trapezoidal rule.

(2)

(iii) Find the minimum number of iterations required to attain an accuracy of 0.001 in an interval [1, 2] using bisection method.

(2)

(iv) Explain inherent error, truncation error and round off error.

(3)

2.   (i) Using Newton Raphson method find one of the roots of the equation

$$x^3 + 2x^2 + 10x - 20 = 0$$

(5)

(ii) Find a real root of the equation $x^3 - 3x - 5 = 0$ by bisection method.

(5)

OR

Expand $\log(1+x)$ in a Taylor expansion about $x_0 = 1$ through terms of degree four. Obtain a bound of the truncation error when approximating $\log(1.2)$ using this expansion for $1 \leq x \leq 1.2$

(5)

3.   (i)   Given that :

X:	50	51	52	53	54	55	56
Y:	3.6840	3.7084	3.7325	3.7563	3.7798	3.8030	3.8259

Calculate $\dfrac{dy}{dx}$ at X = 53.   (5)

OR

From the following table of x and y, find y'(1.00)

x	1.00	1.05	1.10	1.15	1.20
y	1.00000	1.02470	1.04881	1.07238	1.09544

using

$$f'(x_0) = \frac{-3f_0 + 4f_1 - f_2}{2h}$$

With h = 0.05 and 0.1.   (5)

(ii)   The velocity V of a particle at distance S from a point on its path is given by the following table:

S(ft)	0	10	20	30	40	50	60
V(ft/s)	47	58	64	65	61	52	38

Estimate the time taken to travel 60 ft using Simpson's 1/3 rule.   (5)

4.   (i) Obtain an approximate value of

$$I = \int_{-1}^{1} \left(1 - x^2\right)^{1/2} dx$$

Using Gauss-Legendre integration for n=2.

     (5)

OR

Dividing the interval (1,3) into six equal parts, find approximately the value of

$$\int_{1}^{3} \frac{dx}{\sqrt{3 + x - x^2}}$$

     (5)

(ii) Given

$$\frac{dy}{dx} = x - y \text{ with } y(0) = 1$$

Find y(1) using h=0.25 by Euler's method.

     (5)

5. (i) Find the value of f(x) for x = 10 using the following table :

x	2	3	4	5
f(x)	8	27	64	125

(5)

(ii) Deduce the expression of modified Euler's method.

(5)

OR

Deduce Newton's forward and backward difference interpolation formula. (5)

6. (i) Find the least square fit $y = a + bx + cx^2$ for the data

(5)

x	−3	−1	1	3
y	15	5	1	5

OR

Find the acceleration due to gravity g using the data below and the relation $h = \dfrac{1}{2}gt^2$ where h is the height in meters and t is the time in seconds.

t	0.200	0.400	0.600	0.800	1.000
h	0.1960	0.7850	1.7665	3.1405	4.9075

(5)

(ii) Find the maximum value of f(x) using the table given below :

x	0	1	2	3
f(x)	-21	15	12	3

(5)

B.Sc (H)
Physics

(400)

b *2*

[This question paper contains 4 printed pages.]

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt any **four** questions from the **Six** Questions.

1.   (i)   The first listed of the 12 Principles of Green Chemistry is ?

      (a) Prevent waste

      (b) Catalysis

      (c) Atom economy

      (d) Benign solvent

P.T.O.

(ii) Dr. Paul Anastas & Dr. John Warner created 10 Principles of Green Chemistry to reduce or eliminate the use and generation of hazardous substances?

    (a) True

    (b) False

(iii) Which one of the following three terms is used in the 'sustainability triangle'?

    (a) Micro-economics

    (b) Planet

    (c) Social responsibility

(iv) Green chemists reduce risk by?

    (a) Reducing the hazard inherent in a chemical product or process

    (b) Minimizing the use of all chemicals

    (c) Inventing technologies that will clean up toxic sites

    (d) Developing recycled products

(v) _____, or VOCs, have been replaced and were banned in some paints.

(vi) Benzene, a _____ substance, is an important industrial solvent used in the production of pharmaceuticals, plastics, and dyes. (6×1)

(vii) What are biocatalysts? What are the advantages of bio-catalytic conversions? Give one example of the reaction. (3.5)

2. Write short notes (any **three**) :

(a) Green Chemistry in Sustainable development

(b) Green chemistry in pharmaceutical industry

(c) Solvent free reactions (3,3,3.5)

3. Give the Green Synthesis of following compounds :

(i) Disodium iminodiacetate

(ii) Furfural
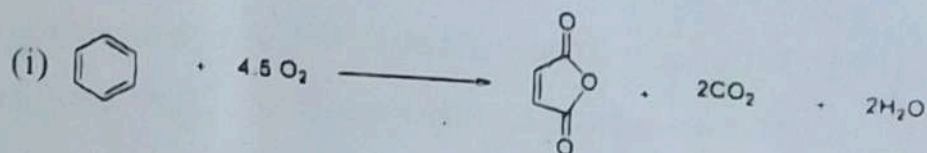
(iii) Acetaldehyde (3,3,3.5)

4. (a) (i) What are the goals of green chemistry?

(ii) How % yield is different from atom economy. Discuss any one reaction where % yield is 100% but not the atom economy.

P.T.O.

(b) Calculate the atom economy of the following reactions :

(Mol mass: C=12, H=1, O=16, Br=80)

(i) + 4.5 O_2 ⟶ + 2CO_2 + 2H_2O

(ii) ⟶ + HBr

(4,5.5)

5. (a) Discuss the following microwave assisted reactions :

(i) Decarboxylation in organic solvents.

(ii) Oxidation of toluene benzamide in water.

(b) hat are immobilized solvents? Explain giving one example.

(5,4.5)

6. (i) Explain what is meant by the term phase transfer catalyst and give one example of such a catalyst.

(ii) Compare heterogeneous and homogeneous catalysis in terms of green chemistry.

(iii) Write a note on green chemistry and catalysis in terms of biocatalysis, asymmetric catalysis and photocatalysis.

(3,3,3.5)

(700)

Your Roll No................

Sr. No. of Question Paper : 1440   A

Unique Paper Code   : 32223904

Name of the Paper   : Basic Instrumentation Skills

Name of the Course   : B.Sc.(Hons. + Prog.) _
                            CBCS_SEC

Semester   : IV

Duration : 3 Hours   Maximum Marks : 50·

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt **Five** questions in all.

3. **Question No. 1** is compulsory.

4. All questions carry equal marks.

1. Answer any five of the following:

   (a) Explain the factors responsible for systematic errors.

P.T.O.

(b) When does static characteristics play au important role in instruments?

(c) The inductance of an inductor is specified as 30 H $\pm$ 6% by a manufacturer.

Determine the limits of inductance between which it is guaranteed.

(d) What do you understand about the loading effects in measurements?

(e) Find the resolution of 4 – 1/2 digit voltmeter.

(f) What is the role of input attenuator and rectifier in an electronic multimeter?

(g) How is CRO superior to ordinary measuring instruments?

(h) What is an a.c. signal?　　　　　　　　　(5×2)

2. (a) "If the measuring variable changes, the instrument rarely responds instantaneously." Comment. Mention the instrument's characteristics related to the above statement.

(b) State the limitations of multirange voltmeters. A basic meter movement with a fullscale deflection

of 20 mA and having an internal resistance of 250 Ω is available. It is to be converted into a 0-5 V, 0-20 V, 0-100 V multi-range voltmeter using individual multipliers for each range. Calculate the values of the individual resistor.   (5+5)

3. (a) What is an AC millivoltmeter? Discuss the various types of AC millivoltmeter.

    (b) Elaborate some of the applications and limitations of AC millivoltmeter.   (6+4)

4. (a) What are the major components of a CRT? Draw the basic block diagram of CRT and explain each component in brief.

    (b) What are the applications of an oscilloscope?   (6+4)

5. (a) Explain the working principle of a dual trace CRO.

    (b) State the function of a delay line used in the vertical section of an oscilloscope.   (6+4)

6. (a) Define a pulse generator. What are the basic requirements of pulse generation?

   (b) Discuss the block diagram and working principle of a basic LCR bridge in detail.   (5+5)

7. (a) What are the advantages of digital systems over analog?

   (b) Explain with the help of a functional block diagram, the principle of operation of a digital frequency meter.   (4+6)

Sr. No. of Question Paper : 1469

A

Unique Paper Code : 32163404

·Name of the Paper : Medicinal Botany

Name of the Course : **B.Sc. (Honours) Botany (SEC)**

Semester : IV

Duration : 2½ Hours

Maximum Marks : 38

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt any **four** questions in all.

3. All questions carry equal marks.

4. Support your answers wherever necessary with suitable diagrams.

1. (a) Write suitable answers for the following (any six) :

$$(0.5 \times 6 = 3)$$

(i) A plant source of Piperine.

(ii) A plant used in cancer prevention.

(iii) A plant used in key ingredients in non-pesticidal management (NPM).

(iv) A plant belonging to Lamiaceae.

(v) A plant known as Shatavari.

(vi) A plant known in Ayurveda as the queen of herbs.

(vii) An Indian system of medicine which has its origin in Greece.

(b) Match of the following : $(0.5 \times 5 = 2.5)$

   (i) *Azadirachta indica*   (a) Skin burns

   (ii) *Aloe vera*   (b) Biopesticide

   (iii) *Withania somnifera*   (c) Memory enhancement

   (iv) *Ocimum sanctum*   (d) Strength & vitality

   (v) *Bacopa moneri*   (e) cold cough

Or

1469

(i) *Curcuma longa*   Meliaceae

(ii) *Tinospora cordifolia*   Combretaceae

(iii) *Azadirachta indica*   Lamiaceae

(iv) *Terminalia chebula*   Menispermaceae

(v) *Ocimum sanctum*   Zingiberaceae

(c) Define the following : **(any four)**   (1×4=4)

(i) Cryopreservation

(ii) Sacred grooves

(iii) Red data list criteria

(iv) Endemic

(v) Organoleptic

(vi) Traditional medicine

2. (a) Write short notes on the following : **(any four)**

(2×4=8)

(i) Medicinal uses of turmeric

(ii) National gene bank

(iii) Nutraceuticals

(iv) Endangered plants

(v) Concept of Umoor-e-Tabiya

(vi) Greenhouse technology

(b) Expand the following : **(any three)**   (0.5×3=1.5)

    (i) NBPGR

    (ii) CIMAP

    (iii) JNTBGRI

    (iv) RRL

    (v) NMPB

    (vi) AIIA

    (vii) AYUSH

3.   (a) Discuss the historical aspects, concepts and principles of Ayurvedic system of medicine.

                                              (5)

(b) Write the therapeutic and pharmaceutical uses of important plants used in the Ayurveda system of medicine.

(4.5)

4.   (a) Differentiate between the following (any two) :

(2.5×2=5)

(i) Siddha system and Unani system

(ii) National Parks and Botanic Garden

(iii) Saptadhatus and Tridoshas

(b) Discuss the various asexual methods of propagation in medicinal plants.   (4.5)

5.   Mention two medicinal plants and explain their importance in treatment of hepatic disorders, cardiac diseases, infertility, diabetes, blood pressure, cancer and skin diseases.   (9.5)

(a) What are the objectives of nursery? Write the lists of important components of nursery.   (5)

(b) Discuss methods of cuttings, layering, grafting and budding.   (4.5)

7. What are the threats to biodiversity? Discuss th various strategies used for conservation of endangered and endemic medicinal plants of India. (9.5)

[This question paper contains 6 printed pages.]

Sr. No. of Question Paper : 3046   **A**

Unique Paper Code   : 12273403

Name of the Paper   : Contemporary Economic Issues (Skill Enhancement Course)

Name of the Course   : **B.A. (Hons) Economics CBCS (SEC)**

Semester   : IV

Duration : 3 Hours   Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. The question paper has **two** sections. **Both** questions in section one are compulsory.

3. Answer any **four** questions from **Section II**.

4. Answers may be written either in English or Hindi; but the same medium should be used throughout the paper.

छात्रों के लिए निर्देश

1. इस प्रश्न-पत्र के मिलते ही ऊपर दिए गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए ।

P.T.O.

2. खण्ड – 1 में **दो** प्रश्न हैं तथा दोनों प्रश्न अनिवार्य हैं ।

3. खण्ड – 2 से **चार** प्रश्नों का उत्तर दीजिये ।

4. इस प्रश्न – पत्र का उत्तर अंग्रेजी या हिंदी किसी एक भाषा में दीजिए, लेकिन सभी उत्तरों का माध्यम एक ही होना चाहिए ।

SECTION I

Answer questions **1** *and* **2.**

1. Write short notes on **any 5** of the following :

$(5 \times 2 = 10)$

   (a) One Nation One Ration card policy

   (b) Global Supply side disruptions

   (c) Nominal Effective exchange rate

   (d) Effective capital expenditure

   (e) Asset monetisation

   (f) Retail inflation and core inflation

निम्नलिखित में से किन्हीं 5 पर संक्षिप्त टिप्पणी लिखिए :

   (क) एक राष्ट्र एक राशन कार्ड नीति

(ख) वैश्विक आपूर्ति पक्ष व्यवधान

(ग) नाममात्र प्रभावी विनिमय दर

(घ) प्रभावी पूंजीगत व्यय

(ङ) संपत्ति मुद्रीकरण

(च) खुदरा मुद्रास्फीति और मूल मुद्रास्फीति

2. From the given information, determine the following :

Particulars	(₹ in crores)
Fiscal deficit	12,000
Revenue deficit	9,000
Primary deficit	5,000
Revenue receipts	6,000
Non-debt capital receipts	10,000

(a) Capital expenditure

(b) Total expenditure

(c) Interest payments   (2,2,1)

दी गई जानकारी से, निम्नलिखित निर्धारित करें :

विवरण	(₹ करोड़ में)
राजकोषीय घाटा	12,000
राजस्व घाटा	9,000
प्राथमिक घाटा	5,000
राजस्व प्राप्तियां	6,000
गैर ऋण - पूंजी प्राप्तियां	10,000

(अ) पूंजीगत व्यय

(ब) कुल व्यय

(स) ब्याज भुगतान

SECTION II

Answer any **4** *questions.*

All *questions carry equal marks (15×4=60)*

किन्हीं 4 प्रश्नों के उत्तर दें। सभी प्रश्नों के अंक समान हैं।

3. What are the measures taken up by the centre to support states during 2021-22? Explain the Government's Barbell strategy to counter the impact of the pandemic.   (5,10)

2021-22 के दौरान राज्यों को समर्थन देने के लिए केंद्र द्वारा क्या उपाय किए गए हैं? महामारी के प्रभाव का मुकाबला करने के लिए सरकार की बारबेल रणनीति की व्याख्या करें

4. List out the key recommendations of 15th finance commission and explain briefly about horizontal and vertical devolution of the commission?   (10,5)

    15 वें वित्त आयोग की प्रमुख सिफारिशों की सूची बनाएं और आयोग के क्षैतिज और ऊर्ध्वाधर हस्तांतरण के बारे में संक्षेप में बताएं?

5. Comment on the fiscal policy measures taken by the Government of India during the pandemic?   (15)

    महामारी के दौरान भारत सरकार द्वारा उठाए गए राजकोषीय नीति उपायों पर टिप्पणी करें?

6. Explain briefly the preparation of the budget? Briefly explain the importance of Budget estimates, Revised estimates and Actual estimates.   (6,9)

    बजट की तैयारी के बारे में संक्षेप में बताएं? बजट अनुमानों, संशोधित अनुमानों और वास्तविक अनुमानों के महत्व को संक्षेप में समझाइए।

7.   Comment on the development of India's Merchandise
     trade after the pandemic and what important policy
     measures are taken to improve the merchandise trade
     in the world economy?   (15)

     महामारी के बाद भारत के व्यापारिक व्यापार के विकास पर टिप्पणी करें
     और विश्व अर्थव्यवस्था में व्यापारिक व्यापार में सुधार के लिए कौन से
     महत्वपूर्ण नीतिगत उपाय किए गए हैं?

8.   What are some major concerns related to GST?
     Explain the concept and current status of GST
     implementation.   (5,10)

     जीएसटी से संबंधित कुछ प्रमुख चिंताएं क्या हैं? जीएसटी कार्यान्वयन
     की अवधारणा और वर्तमान स्थिति की व्याख्या करें।

Your Roll No...............

Sr. No. of Question Paper : 3047   A

Unique Paper Code   : 12273404

Name of the Paper   : Research Methodology

Name of the Course   : **B.A. (Hons) Economics – LOCF – SEC**

Semester   : IV

Duration : 3.5 Hours   Maximum Marks : 75
       (or as per DU rules)

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. The question paper consists of 8 questions.

3. Question **1** is COMPULSORY and carries **25** marks.

4. Attempt any **five** questions out of questions **2-8**. Each question carries **10** marks.

5. Answers may be written either in English or Hindi; but the same medium should be used throughout the paper.

छात्रों के लिए निर्देश

1   इस प्रश्न-पत्र के मिलते ही ऊपर दिए गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए ।

2   इस प्रश्न-पत्र में **आठ प्रश्न** हैं ।

3   पहला प्रश्न अनिवार्य है और इसके 25 अंक हैं ।

4   प्रश्न क्रमांक 2 – 8 में कोई 5 प्रश्न करें । प्रत्येक प्रश्न 10 अंक का है ।

5   इस प्रश्न-पत्र का उत्तर अंग्रेजी या हिंदी किसी एक भाषा में दीजिए, लेकिन सभी उत्तरों का माध्यम एक ही होना चाहिए ।

1. (a) 'The structure of a research paper is a gateway to a research project'. Discuss.

    (b) A marketing company wants to know the popularity of a newly launched product across males and females. A survey was conducted on a sample of 200 respondents. Develop an appropriate frame of analysis for this exercise.

(c) Enlist five problems that a social science researcher may face with secondary data sources with an example.

(d) What are the determinants of validity and reliability of a research instrument? Do these determinants differ across quantitative and qualitative research?

(e) A researcher outsourced data analysis work for her academic research. Is this ethical/ unethical in a real life setting of our contemporary world which is governed by the market economy?

(अ) 'शोध आलेख की सरंचना एक शोध रिपोर्ट को समझने में मुख्य भूमिका निभाता है, इस कथन की व्याख्या करो।

(ब) एक विपणन कंपनी एक नए उत्पाद की पुरुषों और महिलाओं में प्रसिद्धि के बारे में जानना चाहती है। इसके लिए 200 प्रतिवादियो (रेस्पोंडेंट्स) का सैंपल इक्कट्ठा करती है। इस सम्बंध में विश्लेषण का कौन सा तरीका उचित होगा ?

(स) सामाजिक विज्ञान के शोधकर्ता को माध्यमिक डाटा स्रोतों के सन्दर्भ में किन पाँच समस्याओं है ? उदाहरण देकर बताए ।

(द) किसी शोध उपकरण की वैधता और विश्वसनीयता के कौन-कौन से निर्धारक तत्व होते हैं ? क्या मात्रात्मक और गुणात्मक शोध के आधार पर विषय में कोई अंतर है ?

(इ) एक शोधकर्ता ने अपने अकादमिक शोध के डाटा विश्लेषण विश्लेषण का काम किसी बाज़ार की संस्था से पैसे देकर करवाया है! बाज़ारीकरण के इस दौर में क्या ऐसा करना शोध आचारों का उल्लंघन है ?

2. (a) How do an essay and a working paper differ from a published research paper?

    b) Which element of the research process leads to fresh dimensions of the existing literature on a particular theme? How?

    (अ) एक निबंध और एक वर्किंग पेपर किसी प्रकाशित शोध आलेख से तरह भिन्न होते हैं ?

(ब) शोध आलेख का कौन-सा हिस्सा शोध के नए आयामों को जन्म देता है ? और कैसे ?

3. (a) How does a research design differ from a study design? What role does the literature review play in deciding a study design?

(b) Research outcomes based on quantitative data are influenced by categorical variables. Elaborate on this using five possible ways of categorizing variables.

(अ) शोध प्रारूप किस प्रकार अध्ययन प्रारूप से अलग होता है? एक अध्ययन प्रारूप का चयन करने में साहित्य अवलोकन किस तरह से मदद करता है ?

(ब) श्रेणी चर किस तरह से मात्रात्मक आंकड़ों पर आधारित एक शोध के परिणामों को प्रभावित करता है ? इन चरों का पाँच प्रकार से वर्गीकरण करते हुए समझाइये ।

4. (a) Can good research be conducted without framing a hypothesis? Explain.

(b) A researcher wants to examine the effectiveness of a public health policy running over three decades for people of a particular region. What type of study design must she select to estimate the policy impact and why?

(अ) क्या बगैर परिकल्पनाओं का इस्तेमाल किये एवं अच्छी शोध संभव है ? वर्णन करें ।

(ब) किसी क्षेत्र में एक जन स्वास्थ्य नीति पिछले तीन दशकों से चलायी जा रही है । कोई शोधकर्ता इसकी प्रभावशीलता जानना चाहता है । इसके लिए उसे कौन सा अध्ययन प्रारूप इस्तेमाल करना चाहिए ?

5. (a) The human resource manager of a company that employs 600 people would like to introduce new uniforms. She attempts to find support for her decision by talking to a sample of 10% of employees. Outline two methods to draw a sample, and mention the advantages and disadvantages of both methods.

(b) An external aggression has forced thousands of students from country X to return to their home countries. You have been asked to suggest some policy prescriptions for rehabilitating them. What kind of sampling method will you use? Also briefly discuss the mode of enquiry you will use.

(अ) मानव संसाधन प्रबंधक एक कंपनी, जिसमे 600 कर्मचारी काम करते हैं, में नई वर्दी लागू करना चाहती है । वह 10 प्रतिशत कर्मचारिओं से बात करने के आधार पर अपने इस निर्णय के पक्ष में समर्थन जानना है । ऐसा करने के लिए कौन से दो सैंपलिंग के तरीके वह अपनाये ? इनके फायदे और नुकसान के बारे में भी समझाओ ।

(ब) बाहरी हमले की वज़ह से हजारों विद्यार्थिओं को X देश से अपने-अपने घर लौटना पड़ता है । आपको उनके पुनर्वास के लिए कोई निति सुझाने के लिए कहा गया है । आप कौन-सा सैंपलिंग मेथड चुनेंगे और पूछताछ का तरीका क्या अपनायेंगे ?

6. (a) An organization conducts a survey about the employee experience who underwent a training session. The following questions were asked on the Likert scale.

Statement 1: The training was relevant.

Statement 2: The instructor was engaging.

Statement 3: The quality of the course material used was poor.

Statement 4: The multimedia tools used were not effective.

Statement 5: The content used was easy to understand.

Statement 6: The overall experience with the training session was satisfactory.

Each statement has five possible responses. For a positive statement, the corresponding five-point numerical scale is as follows :

Strongly Agree 5; Agree 4; Uncertain 3; Disagree 2 and Strongly Disagree 1

Two employees' feedback is presented in the table below. Which employee found the training better?

Statement No.	Employee 1						Employee 2					
	1	2	3	4	5	6	1	2	3	4	5	6
Strongly Agree	#								*		*	
Agree		#		#	#					*		
Uncertain						#		*				
Disagree			#				*					
Strongly Disagree												*

(b) Explain the concepts of 'inflation factor' and 'sampling fraction'. What are the common errors in conducting a sample survey?

(अ) एक संगठन उन कर्मचारीओं के किसी प्रशिक्षण के अनुभव में एक सर्वे करता है लिकर्ट पैमाने पर आधारित उनसे निम्नलिखित प्रश्न पूछे गए :

कथन 1 : प्रशिक्षण प्रासंगिक था

कथन 2 : प्रशिक्षक अच्छा था

कथन 3 : पाठ्यक्रम की सामग्री घटिया थी

कथन 4 : मल्टीमीडिया उपकरण प्रभावी नहीं थे

कथन 5 : विषयवस्तु आसान थी

कथन 6 : कुल मिलाकर प्रशिक्षण सत्र संतोषजनक था

प्रत्येक कथन के पाच संभव उत्तर हैं । एक 'सकारात्मक कथन' के लिए, पांच-अंक के संख्यात्मक पैमाने स्तर निम्नानुसार है :

दृढ़ता से सहमत - 5; सहमत - 4; अनिश्चित - 3; असहमत - 2 और दृढ़ता से असहमत - 1

दो कर्मचारीयों की प्रतिक्रिया नीचे तालिका में दी गयी है । कौन से कर्मचारी के अनुसार प्रशिक्षण सत्र बेहतर था ?

	कर्मचारी 1						कर्मचारी 2					
Statement No.	1	2	3	4	5	6	1	2	3	4	5	6
									*		*	
दृढ़ता से सहमत	#									*		
सहमत		#		#	#			*				
अनिश्चित						#						
असहमत			#				*					*
दृढ़ता से असहमत												

(ब) इन्फ्लेशन फैक्टर और सैंपलिंग फ्रेम की अवधारणों को स्पष्ट कीजिए । एक सैंपल सर्वे करते समय होने वाली सामान्य त्रुटियो का वर्णन कीजिये ।

7. (a) Coding of data depends upon the measurement scale of a quantitative variable. Elaborate.

(b) What is the difference between referencing and citation? Describe three common referencing styles that are used in academic research.

(अ) आंकड़ों की कोडिंग मात्रात्मक चर के माप के पैमाने पर निर्भर करती है । विस्तार समझाईये ।

(ब) सन्दर्भ और उद्धरण में क्या अंतर है ? अकादमिक शोध में प्रयुक्त होने वाले किन्हीं तीन सन्दर्भ शैलीयो का वर्णन करें ।

8. Write short notes on any **two** of the following :

(a) Role of ethics in research

(b) Qualitative approach to research

(c) Snowball sampling

(d) Reliability of a research instrument

निम्नलिखित में से किन्हीं दो पर लघु टिप्पणी लिखो

(अ) शोध में आचार की भूमिका

(ब) गुणात्मक शोध विधि

(स) स्नोबॉल सैंपलिंग

(द) शोध उपकरण की विश्वसनीयता

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[This question paper contains 4 printed pages.]

P

Your Roll No...............

Sr. No. of Question Paper : 3066   A

Unique Paper Code   : 12313405

Name of the Paper   : Indian Art and Architecture

Name of the Course   : **BA History Honours (SEC)**

Semester   : IV

Duration : 3 Hours   Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Answer may be written either in English or Hindi but the same medium should be used throughout the paper

3. Attempt **any four** questions.

4. All questions carry equal marks.

छात्रों के लिए निर्देश

1. इस प्रश्न-पत्र के गिलते ही ऊपर दिए गए निर्धारित स्थान पर .अपना अनुक्रगांक लिखिए ।

2. इस प्रश्न के उत्तर अंग्रेजी या हिंदी किसी एक भाषा में दीजिये, लेकिन सभी उत्तर एक ही माध्यग में होने चाहिए।

P.T.O.

3. किन्हीं चार प्रश्नों के उत्तर दीजिये।

4. सभी प्रश्नों के अंक समान है।

1. Examine the orientalist and nationalist viewpoints of Indian art.

भारतीय कला के प्राच्यवादी और राष्ट्रवादी दृष्टिकोण का परीक्षण कीजिए।

2. Examine various features of Gandhara and Mathura school of sculpture.

मूर्तिकला के गांधार और मथुरा शैली की विभिन्न विशेषताओं का परीक्षण करें।

3. Examine the contribution of the Chola dynasty to Indian art.

भारतीय कला में चोल वंश के योगदान का परीक्षण कीजिए।

4. Explain the significance of Ajanta murals or Kangra paintings.

अजन्ता भित्ति चित्रों या कांगड़ा चित्रों की विशेषताओं की व्याख्या करें।

5. Write about the making of Jama Masjid as an emperor mosque in the city of Shahjahanabad.

शाहजहानाबाद शहर में जामा मस्जिद के शाही मस्जिद बनने की प्रक्रिया के बारे में लिखिए।

6. Examine the colonial architecture of Lutyens Delhi.

लुटियंस दिल्ली की औपनिवेशिक वास्तुकला का परीक्षण करें।

7. Analyse the Mughal paintings with special reference to the development of portraiture paintings under Jahangir.

जहाँगीर के अधीन चित्रांकन चित्रें के विकास के विशेष संदर्भ मे मुगल चित्रें का विश्लेषण करें।

8. Describe important features of Bengal school of art or Madhubani painting.

बंगाल स्कूल अण्फ आर्ट या मधुबनी पेंटिंग की महत्त्वपूर्ण विशेषताआ
का वर्णन करें।

Roll No.:

Unique Paper Code	:	12133905_OC
Name of the Paper	:	**Sanskrit Meter and Music**
Name of the Course	:	**B.A. (Hon.) SEC, CBCS**
Semester	:	IV
Duration	:	**3 Hours**
Maximum Marks	:	**75 Marks**

(Write your Roll No. on the top immediately on receipt of this question paper)

(इस प्रश्नप्रत्र के मिलते ही ऊपर दिये गये निर्धारित स्थान पर अपना अनुक्रमांक लिखिए।)

Note: Unless otherwise required in a question, answers should be written in **Sanskrit** or in **Hindi** or in **English** but the same medium should be used throughout the paper.

टिप्पणी: अन्यथा आवश्यक न होने पर इस प्रश्न-पत्र का उत्तर **संस्कृत, हिन्दी** अथवा **अंग्रेजी** किसी एक भाषा में दीजिए, परन्तु सभी प्रश्नों के उत्तरों का माध्यम एक ही होना चाहिए।

Answer all questions.

सभी प्रश्नों के उत्तर दीजिए।

1. छन्दशास्त्र के उद्भव एवं विकास पर विस्तार से निबन्ध लिखिए।   9
   Write an essay in detail on the origin and development of Sanskrit meters.
   अथवा / Or

   संस्कृत छन्दशास्त्र के प्रमुख आचार्यों का परिचय दीजिए।
   Write an introduction of principal Acharya's of Sanskrit *Chhandahśāstra.*

2. वृत्त कितने प्रकार के हैं, सोदाहरण समझाइए।   8
   Explain the classification of meters with examples.
   अथवा / Or

   मात्रावृत्त को समझाइए।
   Explain the Quantitative verse (mātrāvṛtta).

1

3. निम्नलिखित में से किन्हीं *दो* पर टिप्पणी लिखिए :   8

   Write a short note on any **two** of the following:

   अक्षरवृत्त (akṣaravṛtta), लघु-गुरु (laghu-guru), यति (yati), पाद (feet).

4. निम्नलिखित वैदिक छन्दों में से किन्हीं *दो* का लक्षण और उदाहरण दीजिए :   10

   Write the definition and example of any **two** of the following vedic Meters :

   गायत्री (gāyatrī), अनुष्टुप (anuṣṭup), जगती (jagatī).

5. निम्नलिखित लौकिक छन्दों में से किन्हीं *दो* का लक्षण और उदाहरण दीजिए :   10

   Write the definition and example of any **two** of the following classical Meters :

   भुजङ्गप्रयात (bhujaṅgaprayāta), आर्या (āryā), मालिनी (mālinī), शिखरिणी (śikhariṇī).

6. निम्नलिखित वैदिक छन्दों में से किन्हीं *तीन* की गान-पद्धति का विश्लेषण कीजिए :   15

   Analyse the lyrical methods of any **three** of the following vedic Meters :

   उष्णिक (uṣṇik), बृहती (bṛhatī), अनुष्टुप (anuṣṭup), त्रिष्टुप् (triṣṭup),
   पङ्क्ति (paṃkti).

7. निम्नलिखित लौकिक छन्दों में से किन्हीं *तीन* की गान-पद्धति का विश्लेषण कीजिए :   15

   Analyse the lyrical methods of any **three** of the following classical Meters :

   स्रग्विणी (sragviṇī), हरिगीतिका (harigītikā), विद्युन्माला (vidyunmālā),
   वसन्ततिलका (vasantatilakā), मन्दाक्रान्ता (mandākrāntā).

Roll No.   :

Sl. No. of Q.P.   :   3118

Unique Paper Code   :   12133905

Name of the Paper   :   **Sanskrit Meter and Music**

Name of the Course   :   **B.A. (Hon.) SEC, LOCF**

Semester   :   IV

Duration   :   3 Hours

Maximum Marks   :   75 Marks

(Write your Roll No. on the top immediately on receipt of this question paper)

(इस प्रश्नपत्र के मिलते ही ऊपर दिये गये निर्धारित स्थान पर अपना अनुक्रमाक लिखिए।)

Note: Unless otherwise required in a question, answers should be written in Sanskrit or in Hindi or in English but the same medium should be used throughout the paper

टिप्पणी: अन्यथा आवश्यक न होने पर इस प्रश्न-पत्र का उत्तर **संस्कृत, हिन्दी** अथवा अंग्रेजी किसी एक भाषा में दीजिए. परन्तु सभी प्रश्नों के उत्तरों का माध्यम एक ही होना चाहिए ।

Answer all questions.

सभी प्रश्नों के उत्तर दीजिए।

1.   छन्दःशास्त्र के ऐतिहासिक विकास पर एक विस्तृत निबन्ध लिखिए।   9
     Write an elaborate essay on the historical development of Sanskrit prosody.

                              अथवा/ Or

     संस्कृत छन्दःशास्त्र के प्रमुख ग्रन्थों का परिचय दीजिए।
     Introduce principal treatises of Sanskrit prosody.

2.   वृत्तों के वर्गीकरण को उदाहरणों से समझाइए।   8
     Explain the classification of meters with examples.

                              अथवा/ Or

विषमवृत्त एवं अर्धसमवृत्त को उदाहरणों के द्वारा स्पष्ट कीजिए।
Explain the विषमवृत्त and अर्धसमवृत्त with illustrations.

3. निम्नलिखित में से किन्हीं **दो** पर टिप्पणी लिखिए   8
Write a short note on any **two** of the following:

वर्णवृत्त (varnavṛtta), लघु-गुरु परिमाप (measuring laghu-guru), यति (pause), पाद (feet).

4. निम्नलिखित वैदिक छन्दों में से किन्हीं **दो** का लक्षण और उदाहरण दीजिए   10
Write the definition and example of any **two** of the following vedic Meters :

पङ्क्ति (pamkti), गायत्री (gāyatrī), अनुष्टुप् (anuṣṭup)

5. निम्नलिखित लौकिक छन्दों में से किन्हीं **दो** का लक्षण और उदाहरण दीजिए   10
Write the definition and example of any **two** of the following classical Meters :

स्रग्विणी (sragviṇī), आर्या (āryā), मालिनी (malinī), मन्दाक्रान्ता (mandakrāntā)

6. निम्नलिखित वैदिक छन्दों में से किन्हीं **तीन** की गान-पद्धति का विश्लेषण कीजिए   15
Analyse the lyrical methods of any **three** of the following vedic Meter

जगती (jagatī), उष्णिक् (uṣṇik), बृहती (bṛhatī), अनुष्टुप् (anuṣṭup), त्रिष्टुप् (triṣṭup).

7. निम्नलिखित लौकिक छन्दों में से किन्हीं **तीन** की गान-पद्धति का विश्लेषण कीजिए   15
Analyse the lyrical methods of any **three** of the following classical Meters :

भुजङ्गप्रयात (bhujaṅgaprayāta), हरिगीतिका (harigītikā), विद्युन्माला (vidyunmālā), वसन्ततिलका (vasantatilakā), शिखरिणी (śikhariṇī).

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SET-2

(This question paper contains _2_printed pages)

Your Roll No._____

Unique Paper Code   :   12313405_OC

Name of the Course   :   B.A.(Hons) History – SEC

Name of the Paper   :   Indian Art and Architecture (NC) Admission 2016 onwards

Semester   :   IV

Duration : 3 hours   Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on top immediately on receipt of this question paper.
2. Attempt **FOUR** questions in all.
3. **All** questions carry equal marks.
4. Answers may be written in English or Hindi but the same medium should be followed throughout the paper.

छात्रों के लिए निर्देश

१. इस प्रश्नपत्र के मिलते ही ऊपर दिये गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए।
२. कुल **चार** प्रश्नों के उत्तर दीजिए।
३. सभी प्रश्नों के अंक समान हैं।
४. इस प्रश्न पत्र का उत्तर अँग्रेजी या हिन्दी किसी एक भाषा में दीजिए, लेकिन सभी उत्तरों का माध्यम एक ही होना चाहिए।

1. Discuss the recent trends in the historiography of Indian art.
   भारतीय कला के इतिहासलेखन में हाल के रुझानों पर चर्चा कीजिये।

2. Analyze the salient features of Nagara style of temple architecture.
   मंदिर स्थापत्यकला की नागर शैली की प्रमुख विशेषताओं की विवेचना कीजिये।

3. Discuss the ancient Indian mural tradition with reference to Ajanta caves.
   अजंता के सन्दर्भ में प्राचीन भित्ति चित्रण परंपरा का विवेचन कीजिये।

4. Discuss the imperialistic features of the Chola Bronzes.
   चोल काँस्यों की साम्राज्यवादी विशेषताओं की विवेचना कीजिये।

1

5. The Mughal painting reached its zenith under Jahangir. Discuss.
   मुगल चित्रकला जहांगीर के अधीन अपने चरमोत्कर्ष पर थी । विवेचना कीजिये ।

6. The reign of Shahjahan was the golden age of Mughal architecture. Elucidate this statement.
   शाहजहां का शासनकाल मुगल वास्तुकला का स्वर्णिम युग था । इस कथन की व्याख्या कीजिये ।

7. The torch bearer of 'cultural nationalism' in Bengal was Abanindranath Tagore. Analyse this statement in context to his contribution to the Bengal School of art.
   बंगाल में सांस्कृतिक राष्ट्रवाद के पथप्रदर्शक अबनींद्रनाथ टैगोर थे । कला की बंगाल शैली में उनके योगदान के सन्दर्भ में इस कथन की विवेचना कीजिये ।

8. Write short notes on any two of the following:
   निम्नलिखित में से किन्ही दो पर संक्षिप्त टिप्पणी लिखिए:

   (A) Gandhara or Mathura art
       गांधार कला या मथुरा कला

   (B) Taj Mahal
       ताज महल

   (C) Kangra painting
       काँगड़ा कला

   (D) Lutyen's Delhi
       लुट्येन्स दिल्ली

18
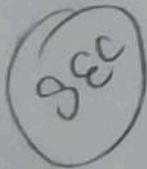
[This question paper contains 9 printed pages.]

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. **All** questions are compulsory.

1. Attempt any **five** parts.   (5×2=10)

   (i) Mention any 3 commands used for horizontal spacing in maths mode. Also, which command is used for negative spacing in maths mode?

   (ii) How can you add a footnote in a LaTeX document? Explain with an example.

(iii) Which command in LaTeX can be used to rotate text through a specified angle? Write its general syntax.

(iv) Mention any 2 optional arguments that can be given in documentclass command?

(v) Write the commands to draw an oval using LaTeX's picture environment? What optional arguments can be added to obtain only quarter of the oval?

(vi) Write the commands in LaTeX to get the following output :

If $x \not< y$ then $x \leq y - 1$.

(vii) What will be the output of the following LaTeX command :

\textit{This is an \emph{important} \LaTeX document.}

(viii) Write the commands in LaTeX to create the following list :

[gnat] A small animal

[armadillo] A medium sized animal

[gnu] A large animal

(ix) Write the command in LaTeX to get the following output :

Let $f : A \xrightarrow{\text{Onto}} B$ be a real valued function.

2. Attempt any **three** parts. $(3 \times 3 = 9)$

Write the code to get the following outputs :

(i) $4x - y + 3z = 2$

$$y - z = 4$$

$$3x + 4y + 2z = 1$$

(ii) $f(x) = \begin{cases} \sin \dfrac{1}{x}, & x \neq 0 \\ 0, & x = 0. \end{cases}$

(iii) $\lim\limits_{n \to \infty} \left(n \log \dfrac{x_n}{x_{n+1}} \right) = \dfrac{1}{2}$

(iv) $P = \begin{bmatrix} P_{00} & P_{01} & P_{02} & \cdots \\ P_{10} & P_{11} & P_{12} & \cdots \\ \vdots & \vdots & \vdots & \cdots \\ P_{i0} & P_{i1} & P_{i2} & \cdots \\ \vdots & \vdots & \vdots & \cdots \end{bmatrix}$

(v) $\int_0^1 f(x)dx = \sum_{k=1}^n \int_0^k \frac{1}{x} dx$

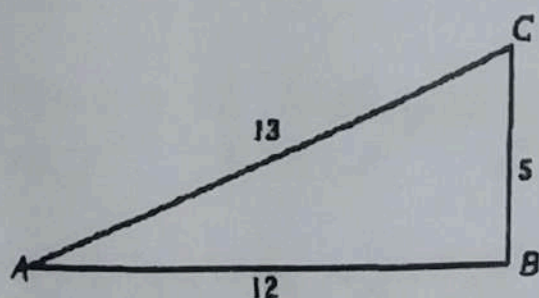(vi) $r = \left(\frac{\tan\left(\frac{\alpha+\beta}{2}\right)}{\tan\alpha + \tan\beta} \right) + \gamma^{3^2}$

3. Attempt any **two** parts. $(2\times5=10)$

(a) Use PSTricks, to draw a circle with a shaded sector. Also, label its radius.

(b) Plot the functions sinx and sin3x over $-2\pi \le x \le 2\pi$. Show the curve for sinx as a solid curve and sin3x as a dotted curve.

(c) Use PSTricks, to draw a picture of a 5-12-13 Pythagorean triangle as below :

(d) Write a LaTeX code to insert an image of size 50mm height and 40mm width, name "mypic.eps" in your document. Also, give the command to scale the image to 1.5 of its size.

               (9)

4.   Attempt any **one** part.

    (a) Write a code in LaTeX to create the following beamer presentation :

Slide: 1

Matrices

John

22nd December, 2022
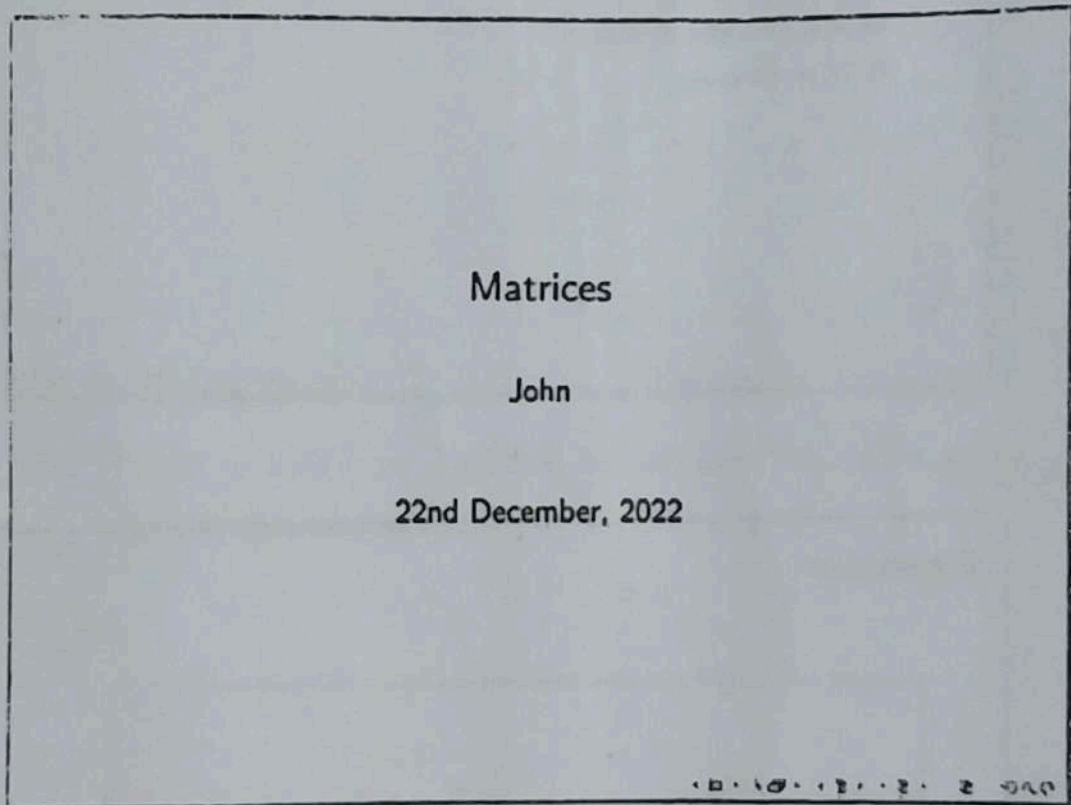
Slide:2

Matrix Properties

Let A and B be two square matrices, then
- $A + B = B + A$
- $A + O = O + A = A$
- $IA = AI = A$

Slide: 3

Eigenvalue

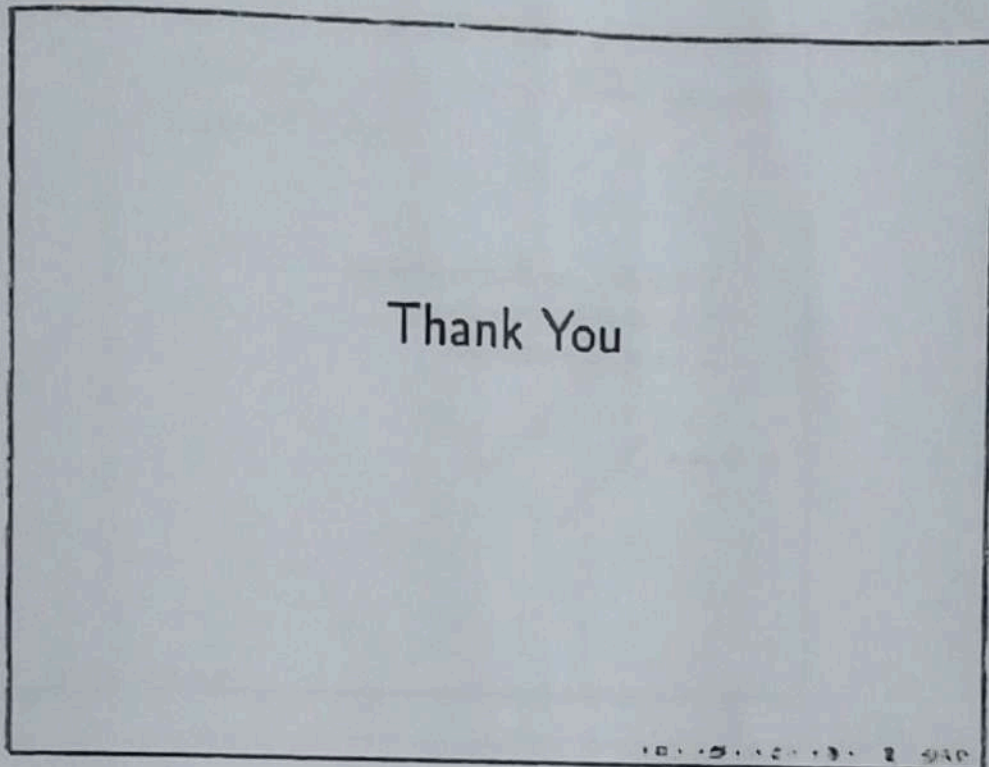An eigenvalue of of a square matrix A is a scalar λ such that the equation
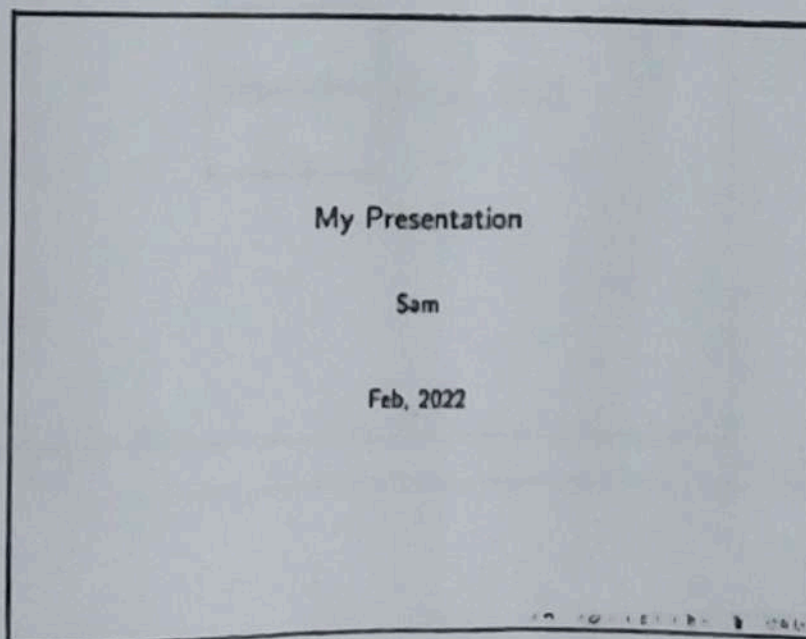
$$Ax = \lambda x$$

has a nontrivial solution.

Slide:4

Thank You

(b) Write a code in LaTeX to create the following beamer presentation :
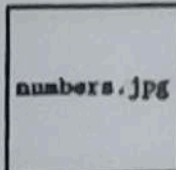
Slide: 1

My Presentation

Sam

Feb, 2022

Slide:2

1. 1, 2, 3, ... are Natural numbers.
2. ½ is a rational number.
3. 1 and −5 are Integers.

Slide:3

Picture

numbers.jpg
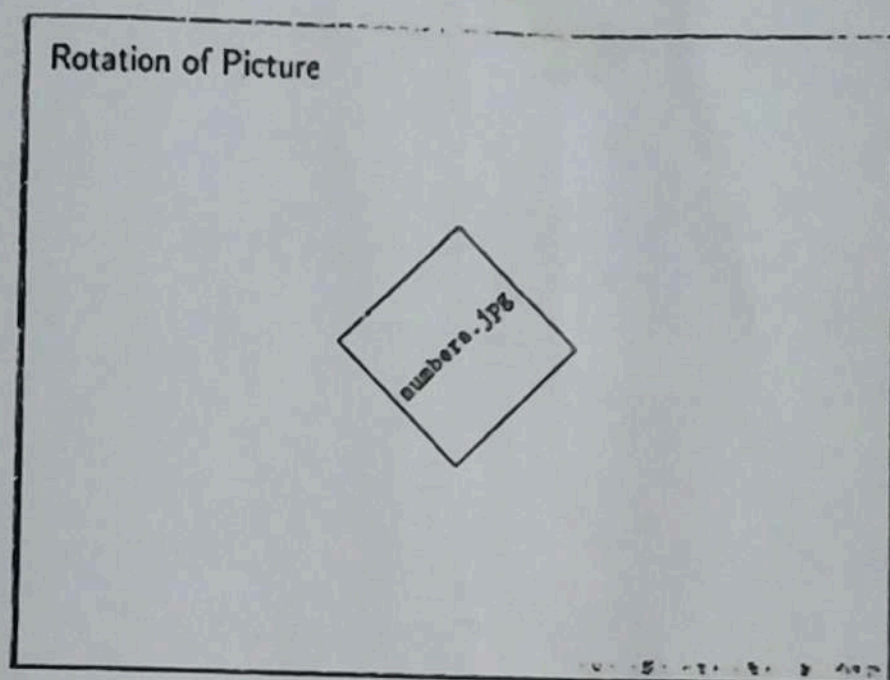
Slide: 3

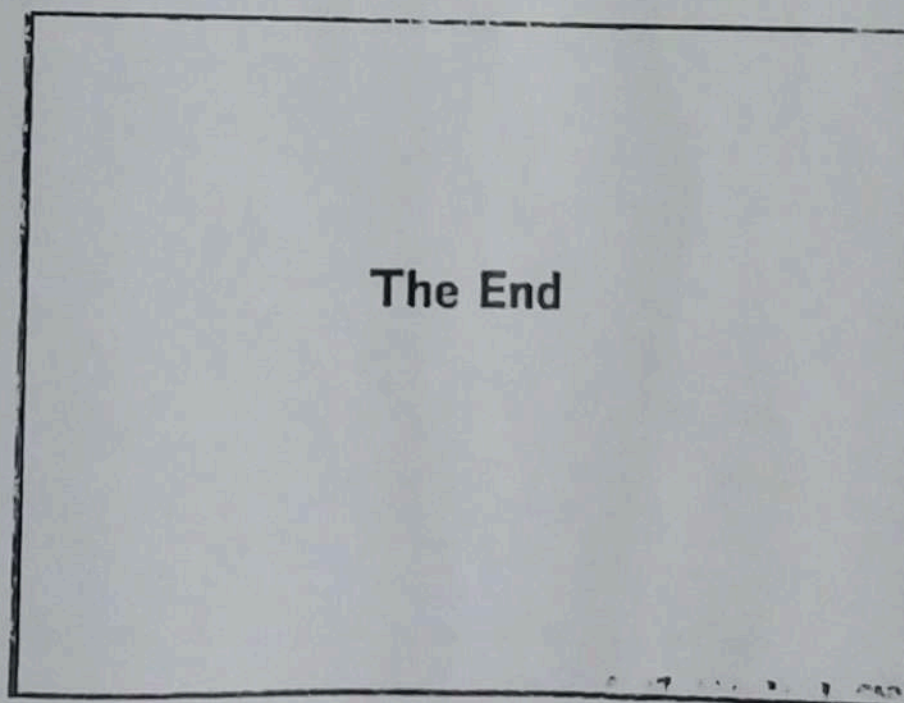Rotation of Picture

numbers.jpg

Slide:4

The End

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૧.

Your Roll No............

A

Sr. No. of Question Paper : 1467

Unique Paper Code : 42343409

Name of the Paper : Programming in C++ (SEC)

Name of the Course : **B.Sc. (Prog.) Physical Science / Mathematical Science**
(Admission 2019 onwards)

Semester : IV

Duration : 2 Hours

Maximum Marks : 25

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Question No. **1** is compulsory.

3. Attempt any **three** questions from Q. No. **2** to Q. No. 7.

1. (a) What is data hiding? Explain how it is achieved in C++. (2)

   (b) Write a function called *power* that takes two parameters: a double value **n** and an int value **p**, calculates n raised to power p (n^p) and returns the result as a double value. (2)

P.T.O.

(c) Consider the value of a = 8, b = 2, c = 6 and x = 2. What will be the value of x for each of the following?

(i) x = a-- + ++c;

(ii) x = (c / 2) % 10;

(iii) x = c / b * a / b;

(iv) x += a + b; (2)

(d) What is the output of the following:

```
int x, y=10;
x = (16%y ? y+5: y++);
cout<<"x="<<x<<"y= "<<y;
```

Also convert the code using an if-else statement.

(2)

(e) Write a function, *islower*, which takes a single character (a letter) as an argument and returns a 1 if the letter is lowercase, or a 0 if it is uppercase.

(2)

2. A point on the two-dimensional plane can be represented by two numbers: an x coordinate and a y

coordinate. For example, (4, 5) represents a point in a 2-D plane.

Write a program that declares a class called **Point** to model a point in 2-D plane.

The class comprises of the following :

1. Two private data members to store the x and y coordinates

2. A parameterised constructor for setting the values for the data members

3. Function *showPoint* to display the values of the x and y coordinates of the point

4. Function *addPoint* which accepts two Point objects . *P1 and P2* and adds P1 into P2 (the sum of two points can be defined as a new point whose x coordinate is the sum of the x coordinates of the two points, and whose y coordinate is the sum of the y coordinates)

In the **main** function, code for the following :

1. Define three points inside main(), and have the user input values to two of them, use the parameterised constructor for the same

2. Set the third point equal to the sum of the first two by calling the function addPoint

3. Display the value of the new point using showPoint.

Interaction with the program might look like this:

> Enter coordinates for p1: 3 4
>
> Enter coordinates for p2: 5 7
>
> Coordinates of p1 + p2 are: 8, 11   (5)

3. (a) When are two or more functions said to be overloaded? Explain with suitable examples.

(2)

(b) Define a structure called *Employee* that contains two members: an employee number (type int) and the employee's salary (type float).

Create an array of type **Employee** in **main()** and ask the user to fill in the data for three employees. Display the information for each employee entered by the user.

(3)

(1+2+2)

4.

```cpp
class ABC
{
    int mem1;
    float mem2;
    ABC ( )              //function 1
    {
        mem1=10;
        mem2=2.5;
    }
    public:
        void readABC( ); //member function 1.
        void dispABC( ); //member function 2
};
class PQR : public ABC
{
    int mem3;
    float mem4;
    public:
        void readPQR( ); //member function 3
        void dispPQR( ); //member function 4
};
class XYZ: private PQR
{
    int mem5;
    char mem6[10];
    public:
        void readXYZ( ); //member function 5
        void dispXYZ( ); //member function 6
};
int main( )
{
    ABC ob1;     //statement 1
    PQR ob2;
    XYZ ob3;
    return 0;
}
```

(a) Justify whether or not the statement 1 will initialize all the data members for object ob1 with the values given in the function 1.

(b) Mention all the member functions which are accessible by object ob2 declared in the main () function. Give reason.

(c) Mention all the member functions which are accessible by object ob3 declared in the main () function. Give reason.

5. Write a menu-driven program that allows the user to input, inside the **main()**, the marks for 5 students in a 2D integer array (**marks**) where each row contains marks of 3 subjects for each student. The menu should have two options- to calculate total marks of each student and to calculate average marks in each subject. Display the output to the user depending on the option chosen.

Write a function called *totalMarks* which takes as input the array **marks** and returns a 1D array after calculating total marks in three subjects of each student.

Each entry of the 1D array corresponds to the total marks of each student in three subjects.

Write another function, *avgMarks*, that takes as input the array **marks** and returns a 1D array that stores the average marks in each subject.   (1+2+2)

6   Write a program that reads the text from the user and creates a text file "File.txt". Write a function name **countVowels()** to count the number of vowels present in the file. The output of the function should be as shown in the example below.

Example:

If the contents of the file are:

An object is a unit that has both data and the functions that operate on that data.

The function *countVowels()* should display:

Number of vowels in file are 26   (5)

7.   (a) Write a recursive function that takes *n* as an argument and generates the following series.

For *n* = 7, the output should look like

1 4 9 16 25 36 49   (3)

(b) Give the output of the following : (2)

```
i)      float a = 12.25, b = 12.025;

        if(a = b)
            cout<<" a and b are equal ";
        else
            cout<<" a and b are not equal";

ii)     void test (int &y)
            { y++; }

        int main()
        {
            int x=20;
            test(x);
            cout<<x;
            return 0;

        }
```

[This question paper contains 8 printed pages.]

Sr. No. of Question Paper : 2714   A

Unique Paper Code   : 62343416

Name of the Paper   : Web Designing using HTML 5

Name of the Course   : **B.A. (Programme) Skill Enhancement Course** (Admission 2019 onwards)

Semester   : IV

Duration : 2 Hours 20 minutes   Maximum Marks : 25

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Paper has **two** sections. All the questions in **Section A** are compulsory.

3. Answer any **Three** questions from **Section 'B.**

P.T.O.

Section A

1. Attempt all the questions   (10)

(a) Which of the following methods can be used to display data in some form using Javascript?

     (i) document.write()

     (ii) console.log()

     (iii) window.alert()

     (iv) All of the above

(b) What will be the output of the following code snippet?

```
<script type="text/javascript"> !

a = 5 + "9";

document.write(a);

</script>
```

     (i) Compilation Error

     (ii) 14

     (iii) Runtime Error

(iv) 59

(c) What will be the output of the following code snippet?

```
int a=1;

if (a!=null)

    return 1;

else

    return 0;
```

(i) 0

(ii) 1

(iii) compiler error

(iv) runtime error

(d) What are the types of list available in HTML?

(i) Ordered, Unordered Lists

(ii) Bulleted, Numbered Lists

(iii) Named, Unnamed List.

(iv) None of the above

(e) How to display preformatted text in HTML?

    (i) <p>

    (ii) <pre>

    (iii) <hr>

    (iv) All of the above

(f) What is meant by an empty tag in HTML?

    (i) There is no such concept of an empty tag in HTML

    (ii) An empty tag does not require a closing tag

    (iii) An empty tag cannot have any content within it

    (iv) None of the above.

(g) The full form of CSS is:

    (i) Cascading Style Sheets

    (ii) Colored Special Sheets

    (iii) Color and Style Sheets

    (iv) None of the above.

(h) In how many ways can you incorporate CSS in a HTML file?

    (i) 1

    (ii) 2

    (iii) 3

    (iv) 4

(i) How can we select an element with a specific Class in CSS?

    (i) #

    (ii) .

    (iii) ^

    (iv) None of the above

(j) In the below code snippet, in what order will the margins be added?

```
P {
    margin: 25px 50px 75px 100px;
}
```

(i) Top, Right, Bottom, Left

(ii) Top, Left, Bottom, Right

(iii) Top, Bottom, Right, Left

(iv) Right, Left, Top, Bottom

Section B

2. (a) What do you understand by the term 'site map'. How is it different from Wireframe? (2)

(b) Create and explain sitemap for an online shopping website. (3)

3. (a) Write HTML code for creating a nested list as given below. (2)

1. Input Devices

 • Keyboard

 • Mouse

2. Output Devices

 • Monitor

- Printer

- Plotter

(b) Write a java script program to compare two numbers. (3)

4. (a) Create your CV using HTML that has your photo and qualification in a table. (3)

(b) Create an inline CSS for making font color red. (2)

5. Write HTML code for the following output. (5)

┌─ Your Details: ─────────────────────┐
│ Name: [   ]   │
│ Email: [   ]   │
└─────────────────────────────────────┘

┌─ Your Review: ──────────────────────┐
│ How did you hear about us? [Google ▾]│
│   [Google]│
│ Would you visit again?   [Friend]│
│ ○ Yes ○ No ○ Maybe   [Advert]│
│   [Other   ]│
│ Comments: │
│ ┌─────────────────────────────────┐ │
│ │   │ │
│ │   │ │
│ └─────────────────────────────────┘ │
│ ☑ Sign me up for email updates   │
│ [Submit review]   │
└─────────────────────────────────────┘

6. (a) Write Java Script code to print the table of twenty using for loop (3)

(b) Write a Java Script function to add three numbers. (2)

Your Roll No...............

Sr. No. of Question Paper : 3637   A

Unique Paper Code   : 62273426

Name of the Paper   : Research Methodology (Skill Enhancement Course-II)

Name of the Course   : **B.A. (Prog.) Economics – CBCS – LOCF – SEC**

Semester   : IV

Duration : 3 hours   Maximum Marks : 75
            (or as per DU rules)

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. The question paper consists of **nine** questions. Answer any **five** questions.

3. **All** questions carry equal marks.

4. Answers may be written either in English or Hindi; but the same medium should be used throughout the paper.

छात्रों के लिए निर्देश

1. इस प्रश्न-पत्र के मिलते ही ऊपर दिए गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए ।

3637

2

1. (a) Explain participant observation as a method for primary data collection. What is Hawthorne effect? How does it affect quality of research outcomes?

   (b) Explain in detail the difference between concept and a variable with examples. (8+7)

   (अ) सांख्यिकी संग्रह में प्रयुक्त होने वाली सहभागी अवलोकन विधि का वर्णन करो। हॉथोर्न प्रभाव क्या हैं और यह किस तरह शोध की गुणवत्ता को प्रभावित करता हैं?

   (ब) अवधारणा और चर में क्या अंतर हैं? उदाहरण सहित विस्तार से वर्णन कीजिये।

2. (a) Explain the three phases and the operational steps in the research process.

(b) Explain the concept of stratum that is used in stratified sampling. When should stratified random sampling be used? (8+7)

(अ) शोध प्रक्रिया के तीनों चरणों और परिचालन कदमों का वर्णन कीजिये।

(ब) स्ट्रैटिफिएड सैंपलिंग में प्रयोग होने वाली 'स्ट्रेटम' की अवधारणा को समझाईये। इस सैंपलिंग का किस परिस्थिति में प्रयोग करना चाहिए?

3. (a) Discuss the ethical considerations a researcher has to keep in mind concerning research participants.

(b) What difficulties are faced by the researcher in selection and formulation of a research problem? (8+7)

(अ) शोध प्रक्रिया में शामिल प्रतिभागियों के परिप्रेक्ष्य में एक शोधार्थी को किन आचारों (इथिक्स) का ध्यान रखना चाहिये?

4

(ब) शोध समस्या के चुनाव और सूत्रीकरण (फार्मूलेशन) में शोधार्थियों को किन परेशानियों का सामना करना पड़ता हैं?

4. (a) While reviewing literature a researcher came across a research report that was very rich in terms of its analysis, but missing the bibliography section. In the context of the given situation explain the importance of referencing and citation in using the literature while writing your research paper.

(b) What are the key differences between primary and secondary data? (8+7)

(अ) साहित्य अवलोकन के दौरान शोधकर्ता ने एक शोध रिपोर्ट पढ़ी जिसमें एक अच्छा विश्लेषण था, परन्तु कोई ग्रन्थ सूची (बिबलियोग्राफी) नहीं थी। इस स्थिति को ध्यान में रखते हुए सन्दर्भों और उद्धरणों का शोध लेख लिखने में क्या उपयोग हैं? समझाइये।

(ब) प्राथमिक और माध्यमिक (सेकेंडरी) डाटा के अंतर को स्पष्ट कीजिए।

5. (a) Show with the help of any example how a table can be used for data presentation. Explain clearly the different parts of the table.

    (b) What is a panel data study? Explain the usefulness of this study design with an example.   (8+7)

    (अ) उदाहरण देकर समझाए कि डाटा दिखाने में एक तालिका (टेबल) के महत्व को बताइये। एक तालिका के विभिन्न भागों बारे में भी लिखिए।

    (ब) पेनल डाटा क्या अध्ययन होता हैं? उदाहरण सहित अध्ययन के प्रारूप में इसके महत्व को समझाइये।

6. (a) Explain the significance of editing data in the context of data processing in quantitative studies.

    (b) What considerations should be kept in mind while writing the research report? How can developing a draft outline help?   (8+7)

    (अ) मात्रात्मक शोध अध्ययन के डाटा प्रसंस्करण में डाटा संपादन का क्या भूमिका हैं? समझाइये।

(ब) शोध रिपोर्ट तैयार करते समय शोधकर्ता को किन–किन बातों का ध्यान रखना चाहिए? इस सम्बन्ध में प्रारूप खाके की क्या भूमिका हैं?

7. (a) "Construction of a hypothesis is an integral part of a research study". Do you agree with the statement?

(b) Suppose you want to conduct a study on the impact of migration on the family. How will you write a research proposal for the study? (8+7)

(अ) परिकल्पना का निर्माण शोध अध्ययन का एक अभिन्न अंग हैं। क्या आप इस कथन सहमत हैं?

(ब) कल्पना करो कि आपको एक परिवार पर प्रवास (माइग्रेशन) के प्रभाव का अध्ययन करना हैं तो आप किस तरह से शोध प्रस्ताव लिखेंगे?

8. (a) Briefly explain with examples the use of any two graphs in communicating and displaying analysed data.

(b) What are the considerations to be kept in mind while formulating questions when using a questionnaire for primary data collection?

(8+7)

(अ) आप किस तरह से किन्हीं प्रकार के ग्राफों की मदद से विश्लेषित डाटा को दिखाएंगे? संक्षिप्त रूप से बताइये।

(ब) यदि आपको प्राथमिक डाटा संग्रह पड़े तो प्रश्नावली के लिए प्रश्नों का चुनाव करने के लिए किन बातों का ध्यान रखेंगे?

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

(a) Research design and its functions

(b) Qualitative and quantitative approaches to research

(c) Snowball sampling

(d) Reliability of a research instrument

(7.5+7.5)

निम्नलिखित में से किन्हीं दो पर लघु टिप्पणी कीजिये :

(अ) शोध प्रारूप और इसके कार्य

(ब) शोध की मात्रात्मक और गुणात्मक विधियाँ

(स) स्नोबॉल सैंपलिंग

(द) शोध उपकरण की विश्वसनीयता

CkNo.

[This question paper contains 4 printed pages.]

Your Roll No...............

A

Sr. No. of Question Paper : 3649

Unique Paper Code : 62443401

Name of the Paper : General Concepts of Indian Music

Name of the Course : B.A. (Prog.) – Part – II – SEC

Semester : IV

Duration : 3½ Hours   Maximum Marks : 38

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt **five** questions in all, selecting at least **one** question from each section. Question No. 1 is Compulsory.

3. Answers may be written either in English or Hindi; but the same medium should be used throughout the paper.

छात्रों के लिए निर्देश

1. इस प्रश्न-पत्र के मिलते ही ऊपर दिए गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए ।

P.T.O.

2. प्रत्येक खण्ड से कम से कम एक प्रश्न चुनते हुए कुल पाँ प्रश्न कीजिए । प्रश्न संख्या 1 अनिवार्य है ।

3. इस प्रश्न - पत्र का उत्तर अंग्रेजी या हिंदी किसी एक भाषा में दीजिए, लेकिन सभी उत्तरों का माध्यम एक ही होना चाहिए ।

1. Write the Theka of the following Talas along with Matra, Vibhag, Bol, Tali and Khali – (10)

   (a) Jhaptaal

   (b) Dadra

   निम्नलिखित तालों का ठेका उनकी मात्रा, विभाग, बोल, ताली व खाली सहित लिखिये –

   (क) झपताल

   (ख) दादरा

2. What do you know about Swar? Write in detail. (7)

   स्वर के विषय में आप क्या समझते हैं ? विस्तारपूर्वक लिखिये ।

3. Describe any **one** of the following essay (7)

   (a) Bhakti Sangeet

(b) Lok Sangeet ka Mahatva

निम्नलिखित में से किसी एक पर निबंध लिखिये –

(क) भक्ति संगीत

(ख) लोक संगीत का महत्व

4. Write any five Alankars based on the prescribed ragas. (7)

अपने पाठ्यक्रम के रागो पर आधारित कोई **पाँच** अलंकार लिखिये ।

5. What is the importance of the work of Pandit Ravi Shankar in the history of Indian Music? Write in detail. (7)

भारतीय संगीत के इतिहास में पंडित रवि शंकर के कार्यों का क्या महत्व है ? विस्तार से लिखिये ।

6. Describe one of the following Ragas – (7)

(a) Yaman

(b) Khamaj

निम्नलिखित में से किसी एक राग का परिचय लिखिये –

(क) यमन

(ख) खमाज

7. Draw a sketch of Tabla and label it.   (7)

तबले का चित्र बनायें और उसके अंगों को रेखांकित कीजिये ।

8. Define the concepts of 'Lakshan Geet'.   (7)

लक्षणगीत की अवधारणाओं को बताइये ।

Or / अथवा

Describe swar in detail.

स्वर को विस्तारपूर्वक समझाइये ।

P

Your Roll No.2...5..3.31.2 /oo/

Sr. No. of Question Paper : 1484   A   - - -

Unique Paper Code   : 42353405

Name of the Paper   : Sec-2 Mathematical
                              Typesetting System: LaTex

Name of the Course   : **B.Sc. Mathematical Science-
                              CBCS: Skill Enhancement**

Semester   : IV

Duration : 2 Hours

Maximum Marks : 38

Instructions for Candidates

1   Write your Roll No. on the top immediately on receipt
     of this question paper

2   Attempt any **two** parts of each question.

1.   (i) Define footnotes and write appropriate
         commands in Latex with example?

     (ii) Write the input command in latex to produce the
          following :

$$\int_0^1 x^5 \sqrt{\frac{1+x^2}{1-x^2}}\, dx.$$

(iii) What is the difference between the following commands in latex?

    (a) \; and \:

    (b) \ddots and \vdots.

(iv) Correct the following input as per Latex commands :

\(\left \ {\frac {\mu. \tau) (\mu + tau] \right}\)

2.   (i) Create a latex file for the following output

        Latex Assignment

          XYZ

      University of Delhi,

        Delhi.

(ii) Explain the following environment with example

    (a) enumerate

(b) itemize

(c) math

(d) array

(iii) In an array environment, what is the meaning of these alignments, (c, 1, r, and &) Justify these alignments with an example?

(iv) Define cases environment with example.

3. Write the code in LaTex to get the following output : (4)

(a) $(y-a)^n \neq \sum_{k=0}^{n} a^{n-k}$.

(b) $(1+x)^{1/n} \neq 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \ldots$

(c) $\sqrt[2]{\frac{a+b}{c+d}} + \sqrt[4]{g}$.

(d) Consider the sets B_1, B_2, B_3.

Then $B_1 \cap (B_2 \cup B_3) = (B_1 \cap B_2) \cup (B_1 \cap B_3)$.

4. Write the code in LaTex to get the following output :   (8)

(a) The Difference equation

$$x_t = ax_{t-1} + b_t (t = 1, 2, 3, \ldots)$$

has the solution

$$x_t = ax_0 + \sum_{k=1}^{t} a^{t-k} b_k \ (t = 1, 2, 3, \ldots)$$

(b) Define the discontinuous factor D_t by

$$D_t = \frac{1}{\prod_{s=1}^{t}(1 + r_s)}$$

$$= \prod_{s=1}^{t}(1 + r_s)$$

(c) $\int \frac{e^x}{\sqrt[3]{1 + e^x}} = \frac{3}{2}\left(1 + e^x\right)^{3/2} + C$
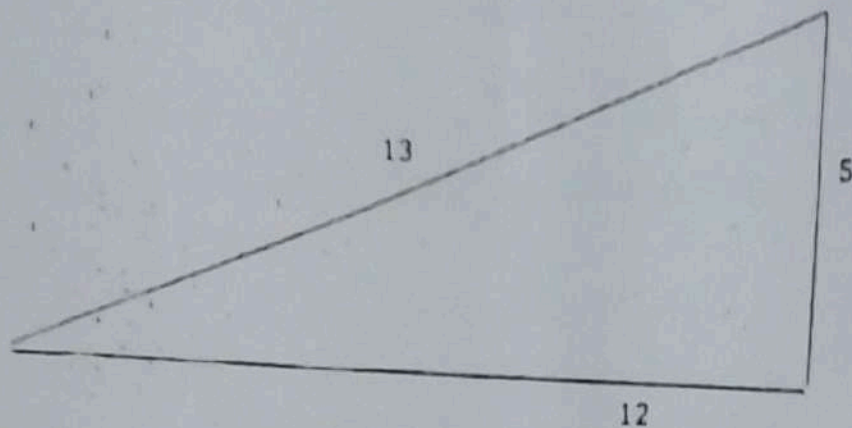
(d) $Sin\, x = \frac{x}{1!} - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots$

$$\sin(-1) = \frac{(-1)^0}{1!} - \frac{(-1)^3}{3!} + \frac{(-1)^5}{5!} - \frac{(-1)^7}{7!} + \cdots$$

5. (a) Write the command in PSTricks to draw the following picture.

(b) Explain the command \psarc (0,0) {2.5} {10} {80}.

(c) Write the command to draw an arrow at (3,2) of length 15 units in the direction of (1,1).

(d) Write the command in PSTricks to plot the function $y = \sin x$.

(6)

6. (a) Write a presentation in beamer with the following content :

Slide-1 Title: Odd

Step-1. Any integer that cannot be divided by 2 is an odd integer.

Examples: 1,3,5,7,....

Slide-2: Title: Even

Step-2. Any integer that can be divided by 2 is an even integer.

Examples: 2,4,6,8,....

Slide-3: Title: Composite

Step-3. Any integer that can be divided by atleast one other number (a factor not 1) other than itself.
Examples: 4, 6, 8, 10, ...

(b) Using beamer prepares a presentation with the following content :

• Slide 1: Title: Beamer presentation

Step-1, $\sin \alpha$ and $\cos \alpha$ are two trigonometric functions.

Slide 2: Title: Some trigonometry identities.

Step-2.

$$\sin^2\theta + \cos^2\theta = 1$$

$$2 \sin\theta \cos\theta = \sin 2\theta.$$

: Slide 3: Title: Beamer presentation

Step-3. Thank You

(c) In beamer, write the command to produce the information about the title page that contains title, author, institute and date.

(d) Write a presentation in beamer with the following content

Slide-1 Title: Differentiable function

Step-1. Let f be differentiable at $x = c$. Then

$$f'(c) = \lim_{x \to c}\left(\frac{f(x) - f(c)}{x - c}\right).$$

Slide-2: Title: Differentiable function

Step-2. Now

$$\lim_{x \to c}(f(x) - f(c)) = \lim_{x \to c}\left(\frac{f(x) - f(c)}{x - c}\right) \times (x - c)$$

$$= f'(c) \times 0.$$

Slide-3: Title: Differentiable function

Step-3. $\lim_{x \to c} f(x) = f(c)$. Therefore, f is continuous at $x = c$.

20

Sl. No. y   Q.P. : 3786

[This question paper contains 2 printed pages]

Roll No.:

Unique Paper Code : 62136950

Name of the Paper : Computer Awareness for Sanskrit

Name of the Course : LOCF, B.A. (Prog.) Sanskrit, Skill Enhancement Course (SEC)

Semester : IV

Duration : 3 Hours

Maximum Marks : 75 Marks

इस प्रश्नप्रत्र के मिलते ही ऊपर दिये गये निर्धारित स्थान पर अपना अनुक्रमांक लिखिए ।
Write your Roll No. on the top immediately on receipt of this question paper

टिप्पणी: अन्यथा आवश्यक न होने पर इस प्रश्न-पत्र का उत्तर **संस्कृत** या **हिन्दी** या अंग्रेजी किसी एक भाषा में दीजिए, परन्तु सभी प्रश्नों के उत्तरों का माध्यम एक ही होना चाहिए ।

Note: Unless otherwise required in a question, answers should be written in **Sanskrit** or in **Hindi** or in **English** but the same medium should be used throughout the paper.

1. विन्डोज़ ऑपरेटिंग सिस्टम की संरचना एवं डिजाइन का संक्षेप में वर्णन कीजिए ।   15
    Describe in brief the Design and Architecture of Windows Operating System.
                              अथवा/OR
    माइक्रोसॉफ्ट पावर प्वाइंट का सामान्य परिचय एवं इसके प्रकार्यों का वर्णन कीजिए ।
    Give the general introduction of Microsoft Power Point and describe its functions.

2. मुख्य सर्च इंजन का परिचय दीजिए ।   15
    Give the introduction of main search engines.
                              अथवा/OR
    देबनागरी यूनीकोड टंकण के लिये बराह सॉफ्टवेयर के प्रयोग करने की विधि का विस्तार में उल्लेख कीजिए ।
    Describe the uses methods of Baraha software for Devanagari Unicode typing.

3. एचटीएमएल का सामान्य परिचय देते हुए इसके मुख्य तत्त्वों का सोदाहरण वर्णन कीजिए ।   15
    Giving introduction of HTML describe its main elements with example.
                              अथवा/OR
    भारतीय भाषाओं के सन्दर्भ में पाठ संसाधन एवं संरक्षण उपकरणों का सर्वेक्षण प्रस्तुत कीजिए?
    Present the survey of text processing and preservation tools in reference to Indian language?

1

4. डेटाबेस के मुख्य कमांड का विस्तार से वर्णन कीजिए ।   15
   Describe major Commands of Database in details.

   ### अथवा/OR

   सीएसएस पृष्ठ का एक प्रारूप प्रस्तुत कीजिए ।
   Make a sample of CSS page.

5. निम्नलिखित में से किन्हीं **दो** पर संक्षेप में टिप्पणी लिखिए: 2x7.5=15
   Write short note on any **two** of the following:
   i.   माइक्रोसॉफ्ट वर्ड (Microsoft Word)
   ii.   यूनीकोड (Unicode)
   iii. विन्डोज 8 (Windows 8)
   iv.   गूगल सर्च इंजन (Google Search Engine)

2\

[This question paper contains 6 printed pages.]

Your Roll No...............

Sr. No. of Question Paper : 1435

A

Unique Paper Code : 42353605

Name of the Paper : SEC-4: Statistical Software-R

Name of the Course : B.Sc. Mathematical Sc. / B.Sc. (Prog.)-CBCS (LOCF)

Semester : VI

Duration : 2 Hours

Maximum Marks : 38

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt all **5** questions, selecting any **2** parts from each.

3. All commands should be written using language R.

Total marks : 2×2=4

Attempt any **two** of the following :

(a) Give R command for data using scale 2, write number from the data, when the stem and leaf chart has a stem of 2 and a leaf of 3 with the

P.T.O.

message :

The decimal point is 1 digit(s) to the left of the |

(b) Give R command to find $\sin(/n\pi/3)$ for $n = 2$, 1, 0, 1, 2.

(c) Give R command to find the running mean of the data: 5 7 5 3 2 6 8 5 6 9 4 5 7 3 .

(d) Give R command to find mean of the list items 'data.list' with output as a matrix.

2.   Total marks: 3×2=6

(a) Using R command convert the following data into integers :

$$m = (8.8, 9.2, 9.3, 4.1, 8.7, 7.0, 3.7, 2.0, 5.4)$$

Also give R command to find order, rank and decreasing order of 'm'.

(b) Write the R commands to enter the characters. May, Mark, Nest, Nestle using the scan() command to get output x : "May", "Mark", "Nest", "Nestle". Also give R commands for objects in x having the word 'est'.

(c) (i) What is the use of fivenum() command in R.

(ii) What is the meaning of R command: >
apply(data, 1, median, na.rm = TRUE)

(d) Give difference between seq( ) and seq _along()
commands in R. Illustrate with example.

3. Total marks : 4×2=8

Giving R command for the following matrix A

	Thistle	Vipers	Blackberry
Garden.bee	8	3	4
Red.tail	18	9	2
Honey.bee	12	13	10
Carder.bee	8	6	32

Write R commands for any two of the following :

(a) Convert the matrix A into a data frame and display
the data for Blackberry only.

(b) Finding the sum of the rows of the matrix A and
the mean of the column 'Vipers'.

(c) Finding the sum of the columns of the matrix A
and the mean of the row 'Red.tail'.

(d) Re-order the columns of the matrix A so that the top row (Garden.bee) is in decreasing abundance from left to right.

4. Total marks : $5 \times 2 = 10$

Give R commands for any **two** of the following :

(a) R commands to produce a histogram for a random sample of 20 numbers between 10 and 50, and also overlay a density plot of blue color having line width 2 units with gaussian kernel.

(b) Giving R command to make a data frame 'aris' of two-column with a response variable (leaf-length) and a predictor variable (species)

leaf-length	9.2	7.3	1	8	2.4	5.1	4	7	6.5	7	3.2	.4	5	3	5	6	4	6
species	A	A	B	A	B	C	B	B	B	C	B	B	B	C	B	C	B	A

Produce a histogram and also overlay a density plot of green color having line width 2 units with gaussian kernel for the species 'B' only.

(c) Shapiro-Wilk normality test and normal quantile-quantile plot with a straight line for the species 'B' only from the above data frame 'aris'. Also

using apply family command to produce Shapiro-Wilk normality test for the species 'A', 'B' and 'C' respectively from the above data frame 'aris'.

(d) Create a PDF of size 5x4 inches to draw a box-whisker plot of the above data frame 'aris' using light blue color.

5. Total marks : 5×2=10

(a) Using R command create the following table 'Score'

	English	Sociology	Geography	Economics
RAJ	81	81	96	92
RIYA	94	98	78	83
JOHN	92	79	82	92
ATHENS	90	85	87	87

Create a box-whisker plot to compare the marks by students in all the four subjects. Also color it blue and add axis labels as 'Subjects' & 'Marks' respectively.

(b) Using R command represent the above data 'Score' graphically through bar cart. Also label the axis and color the bars.

(c) Consider the marks of randomly selected 20 students in Mathematics as :

79 63 59 93 78 72 68 33 85 56 77 45
94 78 83 53 44 47 99 76

Write R commands for the above data into a variable 'M' using scan() and create a blue color line chart of 'M' with instruction of points with line segments between.

(d) R commands to create a pie chart giving title 'Chart-Expenditure' and name to each slice as Health, Education, Industries, Agriculture, Social Sector with 15%, 25%, 45%, 5%, and 10% expenditures respectively from the total expenditure of 1000 cr.

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[This question paper contains 4 printed pages.]

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Answers may be written either in English or in Hindi; but the same medium should be used throughout the paper.

3. Use of simple calculator is allowed.

4. All questions carry equal marks (20 marks each).

5. Attempt any five questions from among the questions given below.

1. State the merits and demerits of Mean as a measure of Central Tendency? Calculate mean from the following frequency distribution:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	6	5	8	15	7	6	3

केंद्रीय प्रवृति के माप के रूप में माध्य के गुण और दोष बताएं? निम्नलिखित आवृति वितरण से माध्य की गणना करें:

P.T.O.

अंक प्राप्त की	0-10	10-20	20-30	30-40	40-50	50-60	60-70
विद्यार्थियों की संख्या	6	5	8	15	7	6	3

2. Define skewness and kurtosis. Write are their properties?

विषमता और कुकुदता (कुर्टोसिस) को परिभाषित करें? उनके गुण क्या हैं। बताइये

3. Explain the various steps involved in the regression of X on Y? The equation of the regression line is X = 1.256 -0.258Y and R^2 is 0.601, Interpret the results.

Y पर X के प्रतीपगमन में शामिल विभिन्न चरणों की व्याख्या करें? प्रतीपगमन रेखा का समीकरण X = 1.256 -0.258Y और R2 0.601 है, परिणामों की व्याख्या करें।

4. Define correlation and rank correlation? What are the properties of correlation?

सहसंबंध और रैंक सहसंबंध को परिभाषित करें? सहसंबंध के गुण क्या हैं?

5. Explain the term hypothesis. What are the different types of hypothesis? Explain Type-I and Type-II error in hypothesis testing.

परिकल्पना शब्द की व्याख्या कीजिए। परिकल्पना के विभिन्न प्रकार क्या हैं? परिकल्पना परीक्षण में टाइप- I और टाइप- II त्रुटि की व्याख्या करें।

6. The yield of wheat and rice per acre for 10 districts of a state is given as under:

District	1	2	3	4	5	6	7	8	9	10
Wheat	12	10	15	19	21	16	18	9	25	10
Rice	22	29	12	23	18	15	12	34	18	12

Calculate for each crop,
(i) Range
(ii) Quartile Deviation
(iii) Mean Deviation about Mean
(iv) Standard Deviation
(v) Which crop has greater variation?

राज्य के 10 जिलों में प्रति एकड़ गेहूं और चावल की उपज निम्नानुसार है:

जिला	1	2	3	4	5	6	7	8	9	10
गेहूँ	12	10	15	19	21	16	18	9	25	10
चावल	22	29	12	23	18	15	12	34	18	12

प्रत्येक फसल के लिए गणना करें,

    (i)   विस्तार

    (ii)   चतुर्थक विचलन

    (iii) माध्य से माध्य विचलन

    (iv) मानक विचलन

(v) किस फसल में अधिक विविधता है?

7. Write short notes on any two of the following
    (i)   Independent variable
    (ii)   Null Hypothesis
    (iii) Level of Significance

निम्नलिखित में से किन्हीं दो पर संक्षिप्त टिप्पणी लिखिए

    (i)   स्वतंत्र चर

    (ii)   शून्य परिकल्पना

    (iii) महत्व का स्तर

8. Define Median and give its merits and demerits? Calculate Median from the following distribution?

Sales (Rs '000)	Frequency
Less than 10	4
Less than 20	20
Less than 30	35
Less than 40	55
Less than 50	62
Less than 60	67

माध्यिका को परिभाषित कीजिए तथा इसके गुण-दोष बताइए? निम्नलिखित वितरण से माध्यिका की गणना करें?

बिक्री ('000 रुपये)	आवृति
Less than 10	4
Less than 20	20
Less than 30	35
Less than 40	55
Less than 50	62
Less than 60	67

Sl. No. of Q.P. : 3751

Unique Paper Code : 62313620
Paper Title: Understanding Text, Rituals and Orality in Indian History
Name of Course: B.A. Programme SEC
Semester VI

Your Roll No.............................

Time: 3.5 Hours
समय : 3.5 घण्टे

Maximum Marks: 75
पूर्णांक : 75

(Write your Roll No. on the top immediately on receipt of the question paper)
(प्रश्नपत्र के मिलते ही ऊपर दिये गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए)

Note: Answers may be written either in English or in Hindi; but the same medium should be used throughout the paper.

टिप्पणी: इस प्रश्नपत्र का उत्तर अंग्रेज़ी या हिन्दी किसी एक भाषा में दीजिए; लेकिन सभी उत्तरों का माध्यम एक ही होना चाहिए.

Answer *any five* questions

1 Discuss the significance of historical documents, rituals and oral traditions in history writing.

इतिहास लेखन में ऐतिहासिक दस्तावेजों, रीति-रिवाजों और मौखिक परंपराओं के महत्व की चर्चा करें।

2 What do you understand by Subaltern Studies? How have scholars associated with it critiqued the existing scholarship and offered new perspective?

निम्नवर्गीय प्रसंग से आप क्या समझते हैं? इससे जुड़े विद्वानों ने किस तरह से मौजूदा विद्वता की आलोचना की है और नए परिप्रेक्ष्य की पेशकश की है?

3 How have scholars critically engaged with the various kinds of archival documents.

विभिन्न प्रकार के अभिलेखीय दस्तावेजों के साथ विद्वानों ने आलोचनात्मक रूप से किस प्रकार कार्य किया है।

4 In what ways has the colonial archive filtered our reading of history ? How have scholars in the late 20th century critically studied these archives?

औपनिवेशिक संग्रह ने ऐतिहासिक दस्तावेजों के हमारे पढ़ने को किस तरह से फिल्टर किया है? 20वीं सदी के अंत में विद्वानों ने इन अभिलेखागारों का समालोचनात्मक अध्ययन कैसे किया है?

5 How have historians engaged with the study of rituals and performance?

इतिहासकारों ने रीति रिवाजों और प्रदर्शन के अध्ययन के साथ कैसे जुड़ाव किया है?

6 How have anthropologists engaged with the study of rituals practices and performances?

मानवविज्ञानियों (Anthropologists) ने रीति-रिवाजों और प्रदर्शनों के अध्ययन के साथ किस प्रकार से जुड़ाव किया है?

7 How have oral narratives helped in the recovery and writing of histories?

मौखिक आख्यानों ने इतिहास को पुनः प्राप्त करने और लिखने में किस प्रकार सहायता की है?

8 What do you understand by the Mnemonics of Speech? Discuss its significance in ways histories have come to be written.

निमोनिक्स ऑफ स्पीच से आप क्या समझते हैं ? इतिहास लिखे जाने के तरीकों से इसके महत्व की चर्चा कीजिए।

9 Critically examine the Imperial Gazetteer of India or James Todd's Annales and Antiquities?

भारत के इंपीरियल गजेटियर (Imperial Gazetteer) या जेम्स टॉड के इतिहास और पुरावशेषों (Annales and Antiquities) का समालोचनात्मक परीक्षण करें?

10 Write short notes on any two of the following

    (A) Adivasis in Colonial India
    (B) Voices from the partition of India
    (C) Report on the Census of India, 1901
    (D) Subaltern Studies Collective

निम्नलिखित में से किन्हीं दो पर संक्षिप्त टिप्पणी लिखिए

(A) औपनिवेशिक भारत में आदिवासी

(B) भारत के विभाजन से आवाजें

(C) उपनिवेशवादी और राष्ट्रवादी अभिजात वर्ग इतिहासलेखन

(D) सबाल्टर्न स्टडी

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[This question paper contains 8 printed pages.]

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Answer questions either in English or Hindi medium but medium of all answers should be same.

3. Attempt **any four** questions.

4. **All** questions carry equal marks.

छात्रों के लिए निर्देश

1. इस प्रश्न-पत्र के मिलते ही ऊपर दिए गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए ।

P.T.O.

2. प्रश्नों के उत्तर अंग्रेजी या हिंदी माध्यम में दें, लेकिन सभी उत्तरों का माध्यम एक ही होना चाहिए।

3. किन्हीं चार प्रश्नों के उत्तर दीजिए।

4. सभी प्रश्नों के अंक समान हैं।

1. "Environmental education fosters learning on ecosystem services, altering youth's attitude towards nature. Critically examine the statement in view of the well-being of ecosystems. (15)

''पर्यावरण शिक्षा पारिस्थितिकी तंत्र सेवाओं पर सीखने को बढ़ावा देती है, प्रकृति के प्रति युवाओं के दृष्टिकोण को बदल देती है। पारिस्थितिक तंत्र की भलाई को देखते हुए इस कथन का समालोचनात्मक परीक्षण कीजिए।

2. "Environmental ethics can help us deal with the challenges associated with waste management in the current developmental scenario". Comment on the statement in light of relevant examples. (15)

''पर्यावरण नैतिकता वर्तमान विकास परिदृश्य में अपशिष्ट प्रबंधन से जुड़ी चुनौतियों से निपटने में हमारी मदद कर सकती है''। प्रासंगिक उदाहरणों के आलोक में कथन पर टिप्पणी कीजिए।

3. The flood plains have been the most fertile farmlands, and thus have experienced large human settlements. The inhabiting population consumes fishes and vegetables grown on these floodplains. Suppose you visited fields along the Yamuna flood plains. As a part of your Environmental Studies Project, you collected vegetable samples from a selected location to check status of heavy metal concentration in three vegetables — brinjal, coriander, and spinach. On analysis of the collected samples, you recorded the concentration of the metal Lead in the samples ranging from 2.8 mg/kg to 13.8 mg/kg. However, as per the Food Safety and Standards Authority of India, the safe limit for lead in vegetables is 2.5mg/kg.

Suggest the possible sources of lead in the vegetables grown on contaminated soil in the floodplains. Discuss the health risks posed by high Lead concentration in the vegetables grown in this region. Suggest measures which can help in improving the water quality in this region.

(15)

बाढ़ के मैदान सबसे उपजाऊ खेत रहे हैं, और इस प्रकार बड़ी मानव बस्तियों का अनुभव किया है। इस पर रहने वाली आबादी इन बाढ़ के मैदानों पर उगाई जाने वाली मछलियों और सब्जियों का सेवन करती है। मान लीजिए आपने यमुना बाढ़ के मैदानों के साथ खेतों का दौरा

किया। अपने पर्यावरण अध्ययन परियोजना के एक भाग के रूप में, आपने तीन सब्जियों – बैगन, धनिया और पालक में भारी धातु की सांद्रता की स्थिति की जाँच करने के लिए एक चयनित स्थान से सब्जियों के नमूने एकत्र किए। एकत्रित नमूनों के विश्लेषण पर, आपने नमूनों में लेड धातु को की सांद्रता 2.8 मिलीग्राम/किलोग्राम से लेकर 13.8 मिलीग्राम/किलोग्राम तक दर्ज की। हालांकि, भारतीय खाद्य सुरक्षा और मानक प्राधिकरण के अनुसार, सब्जियों में लेड की सुरक्षित सीमा 2.5mg/kg.

बाढ़ के मैदानों में दूषित मिट्टी पर उगाई जाने वाली सब्जियों में लेड के संभावित स्रोतों का सुझाव दें। उच्च लेड सांद्रता द्वारा उत्पन्न स्वास्थ्य जोखिमों पर चर्चा करें इस क्षेत्र में उगाई जाने वाली सब्जियों में। उपाय सुझाइए जो इस क्षेत्र में पानी की गुणवत्ता में सुधार लाने में मदद कर सकते हैं।

4. On World Water Day (March 22), you and other members of the Institutional Environment Club visit a school to educate children about the sustainable utilization of water on campus. During visit in the school premises, you noted certain challenges for ensuring water conservation. You ask the students to assess how water is being wasted or mismanaged in the campus. As a part of Sensitization Drive Activity, you make a table and ask students to come up with the challenges to water conservation and seek

sustainable solutions to address the challenges. Fill the table drawn below. An example is provided for your reference. (15)

S. No.	Challenge	Sustainable solution to address the challenge
1.	Rain water not being collected on campus	Rain water Harvesting System and storage pits can be designed to ensure collection and storage of rainwater.
2.		
3.		
4.		
5.		
6.		

विश्व जल दिवस (22 मार्च) पर, आप और संस्थागत पर्यावरण क्लब के अन्य सदस्य परिसर में पानी के सतत उपयोग के बारे में बच्चों को शिक्षित करने करने के लिए एक स्कूल जाते हैं। विद्यालय परिसर में भ्रमण के दौरान आपने जल संरक्षण सुनिश्चित करने के लिए कुछ चुनौतियों पर ध्यान दिया। आप छात्रों से यह आकलन करने के लिए कहते हैं कि परिसर में पानी की बर्बादी या कुप्रबंधन कैसे हो रहा है। संवेदीकरण अभियान गतिविधि के एक भाग के रूप में, आप एक तालिका बनाते हैं और छात्रों को जल संरक्षण की चुनौतियों के साथ आने और चुनौतियों का समाधान करने के लिए स्थायी समाधान खोजने के लिए कहते हैं। नीचे दी गई तालिका को भरें। आपके संदर्भ के लिए एक उदाहरण दिया गया है।

क्रम संख्या	चुनौती	चुनौती का समाधान करने के लिए सतत समाधान
1.	वर्षा का पानी परिसर में एकत्र नहीं किया जा रहा	जल वर्षा जल संचयन प्रणाली और भंडारण गड्ढों को वर्षा जल के संग्रह और भंडारण को सुनिश्चित करने के लिए डिज़ाइन किया जा सकता है।
2.		
3.		
4.		
5.		
6.		

5. "Climate change is one of the most pervasive and threatening issues of our time, with far-reaching impacts in the twenty-first century." Discuss the statement with relevant examples. (15)

''जलवायु परिवर्तन इक्कीसवीं सदी में दूरगामी प्रभावों के कारण हमारे समय के सबसे व्यापक और खतरनाक मुद्दों में से एक है।'' प्रासंगिक उदाहरणों के साथ कथन पर चर्चा करें।

6. Write detailed note on any three of the following

(i) Global warming and its impact on society

(ii) Nuclear energy and its challenges

(iii) Soil erosion and aquatic ecosystems

(iv) Hydrosphere and industry (3×5=15)

निम्नलिखित में से किन्हीं तीन पर विस्तृत टिप्पणी लिखिए

(क) ग्लोबल वार्मिंग और समाज पर इसका प्रभाव

(ख) परमाणु ऊर्जा और इसकी चुनौतियां

(ग) जलीय पारितंत्र और मृदा अपरदन

(घ) जलमंडल और उद्योग

7. Explain the importance of wetlands, especially with respect to urban areas. (15)

आर्द्रभूमियों के विशेषकर शहरी क्षेत्रों के संबंध में महत्व की व्याख्या करें,।

8. What is Air Pollution? Elaborate on the causes and impacts of air pollution in metropolitan cities. (15)

वायु प्रदूषण क्या है? महानगरों में वायु प्रदूषण के कारणों और प्रभावों पर प्रकाश डालिए।

9. What is Biodiversity loss? Explain the anthropogenic factors that have caused large-scale loss of biodiversity across the world. (15)

जैव विविधता हानि क्या है? दुनिया भर में जैव विविधता के बड़े पैमाने पर नुकसान का कारण बनने वाले मानवजनित कारकों की व्याख्या करें।

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[This question paper contains 4 printed pages.]

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Students will attempt 3 questions from Part A and three from Part B.

Part A

Write short answers to **any three** of the following questions:

(10×3=30)

1. How does body language help in communication?

P.T.O.

2. What is mass communication? Discuss its importance in today's world.

3. Discuss barriers to communication.

4. Discuss the merits and demerits of Formal communication.

5. What is Proxemics? What role does it play in communication?

Part B

Read the following passage carefully and then answer any three of the questions given after the passage:

(15×3=45)

Owls are becoming the latest target of illegal bird traders in India as they try ingenious ways to hoodwink the law with the demand for these nocturnal birds soaring in markets abroad. These birds of prey are important to the environment as they help control the rodent population by preying on them. This helps the farmers indirectly by keeping the rat and mice population under control.

Bird experts say that three species of owls that are at present in high demand are the Barn Owl, Great

Horned Owl and the Eurasian Eagle Owl. Each of the birds could fetch between Rs.3 lakhs and Rs.5 lakhs in the global market. There are around 22 species of owls found in India, including the three that have a high demand in the global market. If the illegal trade is not checked at the earliest, it could drastically bring down the owl population.

Poachers catch these birds from the wild to sell them to the traders. Thereafter the birds are smuggled by middlemen to Europe and the Middle East via Nepal and Bangladesh. These owls are mostly kept as pets, but they are also being increasingly used for all kinds of research purposes. After the green munias and rose-ringed parakeets, the owls seem to be now on the verge of extinction according to a study done by the Wildlife Trust of India (WTI).

Since the owls are bigger and weigh more than the parakeets, they are smuggled in ones and twos and not in bulk, making their detection by authorities difficult. Since each adult owl of the three species could weigh around three kilograms and can be easily spotted at airports, therefore, the traders smuggle the birds out of the country via road routes.

After the ban on the capture and trade in wild birds in the 1990s under the Wildlife (Protection) Act 1972 in India, the trade seems to have gone underground but has not ceased.

6. (a) Why are owls in great demand with the illegal bird traders? (5)

   (b) **Summarize** the above passage in about 150 words.

   (10)

7. Rewrite this passage as a **dialogue** between you and your friend. Your friend thinks that birds make great pets while you believe that birds should not be caged.

8. Write **a letter** to the Chairperson of the wildlife department expressing your concern for the problem outlined in the passage. At the same time, suggest a couple of ways to stop the poaching and smuggling of these birds.

9. The TV channel, *Animal Planet*, has asked you to **prepare a report** on the topic of owls - how useful they are; why their numbers are going down and how to save the owl. Write a report on the topic.

10. April 22nd is celebrated as Earth Day. As the Chairperson of the Ornithologists (an expert on birds) society, you have been asked to give a **public speech** on saving owls and other birds from extinction. Write down your speech taking points from the passage.

[This question paper contains 2 printed pages.]

छात्रों के लिए निर्देश

1. इस प्रश्न-पत्र के मिलते ही ऊपर दिए गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए ।

2. सभी प्रश्न अनिवार्य हैं ।

1. 'भाषिक संप्रेषण एक कला है' - कथन के आलोक में संप्रेषण की अवधारणा और महत्व को रेखांकित कीजिए । (15)

अथवा

संप्रेषण के विभिन्न मॉडल कौन से हैं, विस्तार से लिखिए ।

2. मौखिक और लिखित संप्रेषण के स्वरूप को स्पष्ट करते हुए उनमें अंतर बताइए । (15)

अथवा

किन परिस्थितियों में संप्रेषण भ्रामक हो सकता है ? विचार कीजिए ।

3. संप्रेषण के मशीनी माध्यमों का संक्षिप्त परिचय दीजिए ।   (15)

अथवा

संवाद, संप्रेषण का एक आवश्यक माध्यम है, विवेचन कीजिए ।

4. 'मनुष्य है वही जो मनुष्य के लिए मरे' – उक्ति का पल्लवन कीजिए ।

          (15)

अथवा

विश्लेषण और व्याख्या के अभिप्राय बताते हुए उनके अंतर को स्पष्ट कीजिए ।

5. निम्नलिखित दो पर टिप्पणी लिखिए :   (8,7=15)

   (क) विल्वर श्रॉम मॉडल

   (ख) सामाजिक संप्रेषण

   (ग) संप्रेषण की चुनौतियाँ

   (घ) एकालाप

   (ङ) वॉयस ओवर

Sr. No. of Question Paper : 4564   **A**

Unique Paper Code   : 72052804

Name of the Paper   : Hindi Bhasha aur Sampreshan (AECC)

Name of the Course   : **B.A. (Prog.) All Courses**

Semester   : II

Duration : 3 Hours   Maximum Marks : 75

छात्रों के लिए निर्देश

1. इस प्रश्न-पत्र के मिलते ही ऊपर दिए गए निर्धारित स्थान पर अपना अनुक्रमांक लिखिए ।

2. **सभी प्रश्न अनिवार्य हैं ।**

1. सम्प्रेषण की अवधारणा को बताते हुए उसकी प्रक्रिया स्पष्ट कीजिए ।

(10)

अथवा

सम्प्रेषण के विभिन्न मॉडल कौन-कौन से है ? उन पर प्रकाश डालिए ।

2. वैयक्तिक तथा सामाजिक सम्प्रेषण का अर्थ बताते हुए दोनों में अंतर स्पष्ट कीजिए ।

(10)

अथवा

लिखित सम्प्रेषण की सीमाओं पर प्रकाश डालिए ।

3. सम्प्रेषण के माध्यमों में जनसंचार के विभिन्न माध्यमों की भूमिका स्पष्ट कीजिए । (10)

अथवा

सम्प्रेषण के प्रभावी माध्यम के रूप में 'संवाद' की भूमिका पर प्रकाश डालिए ।

4. आयु तथा लिंग किस प्रकार भाषिक सम्प्रेषण को प्रभावित करते है ? स्पष्ट कीजिए । (10)

अथवा

प्रभावी सम्प्रेषण में 'भाषा व्यवहार' पर प्रकाश डालिए ।

5. निम्नलिखित पर टिप्पणी लिखिए : (6,6,6)

   (i) लिखित सम्प्रेषण अथवा अभाषिक सम्प्रेषण

   (ii) व्यावसायिक सम्प्रेषण अथवा भ्रामक सम्प्रेषण

   (iii) सम्प्रेषण की चुनौतियाँ अथवा संभावना

6. निम्नलिखित पर टिप्पणी लिखिए : (6,6,5)

   (i) शब्द सामर्थ्य अथवा भाषिक संरचना की समझ

   (ii) वेबसाइट अथवा इन्टरनेट

   (iii) प्रभावी सम्प्रेषण में शिक्षा का महत्व