2017

Full Marks - 50
Time - 6 Hours
The figures in the right-hand margin indicate marks
Answer ***all*** questions

1. Draw a choropleth map to show the population distribution of India. 10

2. Draw a map to show the physical divisions of Odisha. 10

3. Draw a climograph with comfort scale. 10
   (Data to be supplied)

4. Draw an Ergograph. 10
   (Data to be supplied)

5. Practical Record. 5

6. Viva-Voce. 5

2017

Full Marks - 40
Time - 6 Hours
The figures in the right-hand margin indicate marks
Answer ***all*** questions

1. Answer any ***four*** of the following : 5 × 4

   a) What is sampling ? Describe the sampling methods you have used in your project.

   b) For conducting field work or survey, what is the most appropriate method of data collection ? Explain it.

   c) Why geneology method is important in anthropology ? Explain it.

   d) What are the objectives of the study you have choosen for your project ?

   e) What are the findings of your project work/ dissertation ?

2. Viva-Voce. 12

3. Record. 8

2017

Full Marks - 50

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Solve the ore Reserve Estimation problem. (To be given at the time of exam.) 3

2. Survey the Green area using chain and compass method. 3

3. Identify the building stones (B_1 to B_3) and mention their uses. 3

4. Interprete the geological map related to Dam construction. 3

5. Solve the problem related to Ground water (To be given at the time of Exam.). 3

6. Interpret the photo pair given. 3

7. Field Report and viva-voce. 30

8. Lab. Record. 2

2017

Full Marks - 40

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) What is Action Research ? Write down the need and importance of Action Research in solving any class room problem at the secondary level 20

OR

b) Select one class room problem and describe how to solve the problem by giving a report through Action research format.

2. Record Preparation . 10

3. Viva-Voce. 10

Verify that the factor reversal test and Time reversal test are satisfied by Fisher's Formula.

d) A travelling salesman has to visit 5 cities. He wishes to start from a particular city, visit each city once and then return to his starting point cost of going from one city to another is shown below. Find the least cost route.

To City

From city	A	B	C	D	E
A	∞	4	10	14	2
B	12	∞	6	10	4
C	16	14	∞	8	14
D	24	8	12	∞	10
E	2	6	4	16	∞

2. Record 12

3. Viva-Voce. 8

2017

Full Marks - 40

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Answer any ***two*** of the following : 10 × 2

a) The sales of a company in million of rupees for the year 1994-2001 are given below

Year	***Sales***
1994	550
1995	560
1996	555
1997	585
1998	540
1999	525
2000	545
2001	585

i) Find the linear trend equation

ii) Estimate the sales for the year 1993

iii) Find the slope of the straight line trend.

b) The following data shows the average wages in rupees per hour of workers in a factory during the year 1987t0 1998. So also are given the consumer price indices for these years with 1987 to 1989 as the base year(period).

Year	*Average wage of worker in Rs. per hour*	*Consumer price index (1987-89) as base period*
1987	119	95.5
1988	133	102.8
1989	144	101.8
1990	157	102.8
1991	175	111.0
1992	184	113.5
1993	189	114.4
1994	194	114.8
1995	197	114.5
1996	213	116.2
1997	228	120.2
1998	245	123.5

i) determine the real wages of the rail road workers during the years 1987-1998 as compared to their wages in 1987.

ii) Use the consumer price index to determine the purchasing power of rupee for the various years assuming that in 1987, one rupee was strictly worth rupee one in purchasing power.

c) Prepare price and quantity index no : for 2005 with 2002 as base year from the following data by using

i) Laspeyre's

ii) Paasche's

iii) Marshall Edgeworth

iv) Fisher's Method

Year	*Article-1*		*Article-2*		*A - 3*		*A - 4*	
	Price	*Quantity*	*P*	*Q*	*P*	*Q*	*P*	*Q*
2002	5.00	5	7.75	6	9.63	4	12.50	9
2005	6.50	7	8.80	10	7.75	6	12.75	9

Afternoon Session

4. To assess the level of adaptation and coping skills of the self using 'adaptation' questionnaire and 'coping' checklist.

5. Demonstrate experimentally the phenomenon of negative transfer of training by using mirror tracing apparatus.

6. Assess the creative abilities of five children selected from class VI and grossly identify them as creative or non creative using 'Teacher's Rating of Children's Creativity' scale.

Scheme of valuation in each session

Viva-Voce.	6
Record.	4
Experiment	10

2017

Full Marks - 40

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

Morning Session

1. To assess the quality of the home environment of a preschool child by home observation and parent interview with the help of the revised "HOME Scale".

2 Experimentally find out subject's retention score for nonsense materials under similar and dissimilar context.

3. To demonstrate experimentally the 'Serial position effect' in learning a list of nonsense syllables.

f) Draw the characteristics of a transistor in CE mode.

OR

g) Draw the characteristics of a zener diode.

OR

h) Determine thermal conductivity of rubber in the form of a tube.

2. Viva-voce. 12

3. Record. 8

❐❐

2017

Full Marks - 50

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Determine Young's modulus of the material by vibration of a cantilever. 30

OR

b) Determine the surface tension of mercury by Quinck's method.

OR

c) Determine the Resolving power of grating by spectrometer.

OR

d) Draw the characteristics of a triode-Valve.

OR

e) Determine the coefficient of viscosity of a high viscous liquid by Searle's method.

OR

c) Submission of Economic important plant products. 3

d) Submission of permanent slides. 2

6. Viva-Voce. 6

7. Class Record. 3

❐❐

2017

Full Marks - 50

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Dissect, draw and describe in technical terms the specimen 'A' and 'B'. Underline the diagnostic characters. Write floral formula, draw floral diagram. Identify the genus and species. 9 + 9

2. Make permanent preparation of specimen 'C'. Identify and comment on its anomalous characters. 6

3. Identify on spot :

   Write the Botanical name and family name of supplied specimen 'D' and 'E'. 3

4. Write the Botanical name and economic importance of the following specimen 'F' and 'G'. 2 × 2

5. a) Submission of field study note. 2

   b) Herbarium collection (25 minimum) 3

4. Identify and comment upon the spots 4(i) to 4(v). 5×2
(5 spots shall be set from Economic Zoology)

5. Records and Sessional preparations. 5

6. Viva-Voce. 5

❐❐

2017

Full Marks - 50
Time - 6 Hours
The figures in the right-hand margin indicate marks
Answer ***all*** questions

1. Conduct any one of the following physiology experiment as per the instruction of the examiner. 10
   a) RBC count of man/mammal
   b) Estimation of Haemoglobin of man/mammal
   c) Preparation of haemin crystal from mammalian blood.

2. Conduct any one of the following biochemical experiments as per the instruction of the examiner. 10
   a) Validation of Beer-Lambert's law using Colorimeter
   b) Determine the absorbance maxima of Bromo phenol blue.

3. Perform any ***two*** of the biostatistical experiments/solve the biostatistical problems as per the instruction of the examiner. 5 × 2

Scheme of valuation

General Working	6
Result	18
Calculation	06
	30

❐❐

2017

Full Marks - 50

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Determine the rate constant of hydrolysis of methyl acetate/Ethyl acetate in presence of conc. HCl using NaOH solution of strength_____. 30

OR

b) Determine the distribution co-efficient of iodine between water and CCl_4.

OR

c) Estimate the amount of Ca^{2+} and Mg^{2+} ions in the supplied solution by EDTA titration. Strength of EDTA solution is_____.

2. Viva-Voce. 12

3. Record 8

6. Write a visual basic program to accept the percentage in a text box and display the appropriate grade according to the given criteria. 7½

%	*Grade*
<= 40	D
41 to 60	C
61 to 80	B
81 to 100	A

7. Write a visual basic program to place a list box, text box and command buttons add, remove and exit on a form. The text entered in the text box should be added to the list box when the add button is clicked, removed from the list box when remove is clicked. The exit button should terminate the application. 7½

GROUP - C

8. Viva-Voce. 12

9. Record. 8

❐❐

2017

Full Marks - 50

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer any ***two*** from Group-A and ***two*** from Group-B and Group-C is compulsory

GROUP - A

1. Write a program in C to sort an integer array using quick sort. 7½

2. Write a program in C to insert a new node in a Binary Search Tree. 7½

3. Write a program in C to search a pattern in a given string. 7½

4. Write a program to sort a list of integers using heap sort. 7½

GROUP - B

5. Write a visual basic program to make a mini calculator. 7½

2017

Full Marks - 80

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***four*** question selecting ***one*** from each group.

GROUP - A

12½

1. Trace the curve $x^{2/3} + y^{2/3} = 1$ and name it.

2. Trace the curve $r = a(1 + \cos\theta)$ where $a = 4$ and name the curve.

3. Trace the curve $y = a \cosh\frac{x}{a}$ for $a = 2$

GROUP - B

12½

4. Find a real root of the equation $x^3 - 8x - 4 = 0$ correct to 5 decimal places using Bisection method.

5. Find the smallest positive real root of the equation $x^3 - x - 1 = 0$ correct to 5 decimal places using Newton Raphson's method.

6. Find a positive real root of the equation $x^3 + x^2 - 1 = 0$ correct upto 6 decimal places using secant method.

GROUP - C 12½

7. Find the graphical solution of LPP given below :

Maximize $Z = 20x_1 + 10x_2$

Subject to $x_1 + 2x_2 \leq 40$

$3x_1 + x_2 \geq 30$

$4x_1 + 3x_2 \geq 60$

$x_1 \geq 0, \quad x_2 \geq 0$

8. Find the Numerical solution of IVP

$$\frac{dy}{dx} = x + y, \quad y(0) = 1, \quad x \in [0, 1]$$

by Euler's method.

9. Find the value of $\int_0^1 e^{-x^2} dx$ by compound Simpson's $\frac{1}{3}$ rule with $h = 0.1$

GROUP - D 12½

10. Write a C program for arrangement of numbers in ascending order.

11. Write a program in C to find the factorial of a number using recursion.

12 Write a C program to find the roots of a quadratic equation $ax^2 + bx + c = 0, a \neq 0$.

13. Write a C program to find the sum of the series.

$$1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} \ldots\ldots + \frac{x^n}{n!}$$

GROUP - E

14. Viva-Voce. 20

15. Record. 10

❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Assess the anxiety level of the subject by administering Hamilton Anxiety Rating Scale (HARS). 15

OR

b) Assess the depression profile of an adult female by administering Beck's Depression Inventory (BDI). 15

2. Record 4

3. Viva-Voce. 6

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) What is Book Review ? Write down the need and importance of Reviewing a school test book. 10

OR

b) Describe the steps in reviewing a school test book. 10

2. Project. 10

3. Viva-Voce. 5

IV-UG-Chem(CC)-VIII (Pr)

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Gravimetrically estimate the amount of Nickel(Ni^{2+}) in the supplied solution using dimethyl glyoxime. 10

OR

b) Gravimetrically estimate the amount of Cu^{2+} present in the supplied solution by using NH_4SCN solution.

2. a) Prepare pottassium tris (oxalate) Ferrate (III) and submit 2gms of pure and dry sample. 8

OR

b) Prepare tetramine copper (II) sulphate and submit 2 gms of pure and dry sample.

3. Record. 4

4. Viva-Voce. 6

❐❐

IV-UG-Phy(CC)-VIII (Pr)

2017

Full Marks - 25

Time - 6 Hours

The questions are of equal value

Answer any ***five*** questions

1. WAP to find factorial of a number using recursion.
2. WAP to find roots of a quadratic equation.
3. WAP to check whether a number is even or odd.
4. WAP to find the area of triangle.
5. Solve the defferential equation.

   i) $\frac{dy}{dx} = e^{-x}$ with $y = 0,\ x = 0$

   ii) $\frac{dy}{dx} + e^{-x} * y = x^2$

6. Find the area and volume of a cube.
7. WAP to check wheteher a number is prime or not.
8. WAP to find simple interest.

❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Determine the Absorbance maxima of the supplied sample solution by colorimeter. 9

   OR

   b) Determine the Beer-Lambert's law by using colorimeter.

2. Identify the presence of Carbohydrate in the given solution. 8

3. Practical Record. 4

4. Viva-Voce. 4

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Prepare the LB medium. 9

2. Identify and explain the supplied photograph of:

   DNA replication mechanism / Nucleic acid as genetic material / RNA polymerase /spliceosome machinery. 6

3. Draw and comments the supplied photographs / models. 2 × 2

4. Viva-Voce. 4

5. Record. 2

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) i) Determine Resistance, capacitance and D.C voltage using digital multimeter. 15

   ii) Verify laws of series and paralled grouping of resistance and capcitance.

OR

b) Verify series and parallel grouping of Resistance using meterbridge.

OR

c) Determine the given law resistance by using Carey-Faster's bridge.

OR

d) Compare the given capacitance by using De-Sauty bridge.

OR

e) Determine horizontal component of Earth's magnetic field.

OR

f) Compare EMF of the cells by using Potentiometer.

2. Viva-Voce. 4

3. Record. 6

❐❐

3. Record. 3

4. Viva-Voce. 4

❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Prepare three buffer solutions using Acetic acid and sodium Acetate solution and measure their PH. 9

OR

b) Prepare three buffer solutions using NH_4OH and NH_4Cl solutions and determine their PH. 9

2. a) Prepare 2, 4, 6-Tribromophenol and submit 2 gms of pure and recrystallised sample. 9

OR

b) Prepare 2, 4, 6-Tribromoaniline and submit 2 gms of pure and recrystallised sample. 9

b) Write a program in C to find the root of an equation by Newton Raphson method.

c) Write a program in C to find the root of an equation by Secant method.

GROUP - C

3. Answer any ***one*** of the following : 5

a) Write a C program for LU decomposition method for a given matrix.

b) Write a program in C for Gauss-Jacobi method.

c) Write a program in C for Lagrange Interpolation.

c) Write a program in C for Simpson's rule for integration.

4. Record. 4

5. Viva-Voce. 6

❐❐

IV-UG-Math(CC)-VIII (Pract)

(Arts/Sc)

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***three*** question selecting ***one*** from each group.

GROUP - A

1. Answer any ***one*** of the following : 5

a) Write a C program to calculate the sum $\frac{1}{1}+\frac{1}{2}+\ldots\ldots\ldots+\frac{1}{N}$ for a given N.

b) Write a program in C to find the absolute value of an integer.

c) Write a program in C that reads 100 integers and sort them in an ascending order.

GROUP - B

2. Answer any ***one*** of the following : 5

a) Write a C program to find the root of an equation by Bisection method.

3. Define a class student as below : 5

Data members	*Member methods*
Name, age, m1, m2, m3	A parameterized constructor to initialize the data member.
Maximum, average	To accept the details of student
	To compute the average and the maximum out of three marks
	To display the name, age, marks, maximum and average.

Write a main method to create an object of the class and call the above member methods.

4. Write a Java program to contain a method get ( ) to get two numbers from user in the base class. The derived class contains a method displaymaxi( ) which displays the maximum of the two numbers and a method dispmini ( ) to display the minimum of the two nos. Use constructor. 5

5. Write a Java program to enter a string and count total number of vowles and consonants. 5

6. Write a Java applet program to display an image. 5

7. Write a Java applet program to display a colored rectangle. 5

GROUP - B

8. Record. 4

5. Viva-Voce. 6

❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***three*** question from Group-A

Group-B is compulsary

GROUP - A

1. Write a Java program to find the sum of odd numbers and sum of even numbers for the first n natural numbers. The integer n is to be entered by the user. 5

2. An electricity board charges the following rates to domestic users for the consumption of energy. 5

For the 100 units - 40p per unit

For the next 200 units – 50p per unit

Beyond 300 units – 40p per unit

All user are charged a minimum of Rs. 500. If the total cost is more than Rs. 250.00 then an additional surcharge of 15% is added.

Write a Java program to read the names of the user and number of units consumed and print out the charges with name.

2. a) Find the bill of the given data and put them in the given category. 8

Height	*Weight*
i) 163 cm	57 kg
ii) 127 cm	60 kg
iii) 134 cm	59 kg
iv) 177 cm	60 kg

Categories : a-V.Severely underweight
Severely unde weight
Underweight
Normal weight
Over weight
Obese class-1
Obese class-2

OR

b) Make a nutritional assessment of your friend and state clearly if his/her anthropological indices arc related to nutritional intake.

3. Viva-Voce. 5

4. Record. 4

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Find the chronological age of the given data 1×8

i) Date of birth - 07.09.1966
Date of study - 22.02.2017

ii) Date of birth - 22.07.2006
Date of study - 09.02.2016

iii) Date of birth -15.10.1996
Date of study - 12.05.2000

OR

b) Find the percentile of the given data

172, 153, 264, 184, 239, 144, 238, 100, 152, 139, 100, 216, 314, 116, 200

From the given set of data find the percentile of

(i) 264 (ii) 144 (iii) 139 (iv) 153 (v) 314

d) Determine the degree of disssociation of the supplied electrolytic solution by conductometric method. 15

2. Viva-Voce. 6

3. Record. 4

❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Determine the strength of the supplied strong acid conductometrically using the given strong base having strength_____. 15

OR

b) Determine the strength of the given weak acid potentiometrically using the supplied strong base having strength_____. 15

OR

c) Determine the equivalent conductance of the supplied electrolytic solution by conductometric method. 15

OR

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer any ***all*** questions

1. a) Study the V~I characteristics of a PN junction diode. 15

OR

b) Study the V~I characteristics of a Light emitting diode.

OR

c) Study the V~I characteristics of a Zener diode.

OR

d) Study voltage gain of a RC coupled transistor amplifier..

OR

e) Study the characteristics of a Bipolar junction transister in CE configuration.

OR

f) Study a Colpitt's oscillator.

2. Viva-Voce. 6

3. Record. 4

e) Determine wave length of Laser Source using double slit.

OR

f) Determine wave length of Laser Source using plane diffraction grating.

2. Viva-Voce. 6

3. Record. 4

❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Determine Planck's constant by using photo detector (Take at least three different colours). 15

OR

b) Draw the photo current verus intensity and wave length of light. Also determine workfunction of the material used.

OR

c) Determine the value of e/m by magnetic focussing or bar magnet.

OR

d) Determine wave length of Laser Source using diffraction of single slit.

OR

GROUP - B

2. a) Write a socket program in Java to send a message **"Hello Server"** from client to server. 5

OR

b) Write a socket program in Java to send a massege **"Hello Server"** from client to server and **"Hello client"** from server to client. 5

GROUP - C

3. Record. 4

4. Viva-Voce. 6

❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

GROUP - A

1. Write down the steps to do the following : 2 × 5
(on any ***five***)

a) Mapping your drive in the networking mode

b) Check the IP address and subnet mask in DOS mode

c) Connect two computers by creating crosses over connections

d) Draw a diagram of STRAIGHT CABLE

e) Test the TCP/IP configuration using ping command

f) Reduce the amount of space reserved for Recycle bin

g) Share your printer with other computers in the network.

2017

Full Marks - 50

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Determine Heat Capacity of the given substance using heat capacity Kit. 30

OR

b) Determine effective value of 'g' by ESR apparatus.

OR

c) Determine magnetic susceptibility of the given material by Quinck's method.

OR

d) Determine magnetic susceptibility of the given material by Groy's method.

OR

e) Determine Magneto Resistance of the substance by Four probe method.

2. Viva-Voce. 12

3. Record. 8

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

Section-A

1. a) Assess the academic attitude and behaviour of the college students by using SIA's academic behaviour scale. 10

OR

b) Assess the academic stress of +2 students by administering Rao's academic stress scale. 10

OR

c) Assess the coping skills of the self/other person by using coping checklist. 10

Section-B

2. Record 5

3. Viva-Voce. 10

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

Give labelled diagrams wherever necessary

1. Prepare a temporary slide of the blood cells/check cells of a human female and study the presence of Barr body. 9

2. Identify and comment on the various stages of cell division in the given slides (2 slides of mitosis and 2 slides of meiosis-I). 8

3. Practical Record. 4

4. Viva-Voce. 4

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Determine the minimum quadrat size for the study of herbaceous vegetation by species area curve. 8

OR

b) Analyse quantitatively the herbaceous vegetation for density and abundance.

2. determine the pH of supplied sample. 4

3. Draw and comments the supplied specimens / instruments. 2 × 3

4. Viva-Voce. 5

5. Record. 2

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) What is 'blue print' ? Prepare a blue print of 3 dimension giving weightage to objectives, content and different forms of objective tests. 10

OR

b) Prepare 20 objective based objective type questions (Take only two objectives).

2. Project. 10

3. Viva-Voce. 5

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Assess the empathy behaviour of four college students using Spring's empathy questionnaire.

OR

b) Assess the sense of humour of four college students by administering Mc Ghee's scale of sense humous (MSSH) or any other appropriate scale of sense of humour.

2. Record 5

3. Viva-Voce. 10

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) You are supplied with an organic compound marked_____. Find out the extra element and functional group present in the given compound. Also determine its m.p. / b.p and predict the compound. 18

2. Viva-Voce. 4

3. Record. 3

Scheme of valuation

Element of detection	4
Aromatic/Aliphatic	2
Solubility Test	2
Functional group detection	6
M.P / B.P detection	2
Name and structure of compound	2

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

Give labelled diagrams wherever necessary

1. Solve two genetic problems as per the instruction given. 9

2. Identify the given mutant varieties of Drosophila with labelled diagram and comments. 8

3. Practical record. 4

4. Viva-Voce. 4

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) What is research ? Write down the procedure have to be followed to give a project proposal in research 10

OR

b) What are the formalities you have to adopt while preparing a project proposal.

2. Project. 10

3. Viva-Voce. 5

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Draw the following stratigraphic units in the outline map of India. 6
   a) Cuddapah super group
   b) Vindhyan super group
   c) Gondwana super group.

2. Draw the following stratigraphic units on the outline map of Odisha. 4
   a) Baripada beds
   b) Easternghat group.

3. Identify the given specimens and arrange them chronologically. 3

4. Draw the tectonic division of India map. 6

5. Lab. Record. 3

6. Viva-Voce. 3

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Dissect, draw and describe in technical terms the specimen 'A'. Underline the diagnostic characters. Write floral formula, draw floral diagram. Identify the genus and species and the family to which it belongs. 6

2. Identify on spot : 2 × 3
   Write the Botanical name and family name of supplied specimen 'B', 'C' and 'D'.

3. a) Submission of field study note. 2
   b) Herbarium collection of wild plants 4
   (15 minimum)

4. Viva-Voce. 5

5. Class practical record. 2

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

Section - A

1. a) Demonstrate experimentally the 'Serial position Effect' in learning a list of nonsense materials by the method of anticipation and prompting. 10

OR

b) Experimentally demonstrate the subject's progress in learning over trials by using a list of nonsense syllables. 10

Section - B

2. Record. 5

3. Viva-Voce. 10

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***three*** question from Group-A

Group-B is compulsary

GROUP - A

1. Write a C program to draw a circle. 5

2. Write a C program to draw a line. 5

3. Write a C program to clip a line using Cohen and Sutherland line clipping algorithm. 5

4. Write a C program to clip a polygon.. 5

GROUP - B

5. Record. 4

6. Viva-Voce. 6

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Prepare a blue print of any subject. 10

(Choose your method subject)

OR

b) Prepare 15 objective based objective type test items. 10

(knowledge-05 understanding-05, Application skill-05)

2. Project. 10

3. Viva-Voce. 5

IV-UG-Edn(GE-B)-II (Pr)

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer all questions

1. a) Prepare a blue print of any subject. 10

(Choose your method subject)

OR

b) Prepare 15 objective based objective type test items. 10

(knowledge-05 understanding-05, Application skill-05)

2. Project. 10

3. Viva-Voce. 5

V-48-1 ❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Prepare a blue print of any subject . 10

(Choose your method subject)

OR

b) Prepare 15 objective based objective type test items. 10

(knowledge-05 understanding-05, Application skill-05)

2. Project. 10

3. Viva-Voce. 5

IV-UG-Edn(GE-B)-II (Pr)

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer all questions

1. a) Prepare a blue print of any subject . 10

(Choose your method subject)

OR

b) Prepare 15 objective based objective type test items. 10

(knowledge-05 understanding-05, Application skill-05)

2. Project. 10

3. Viva-Voce. 5

V-48-1 ❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Answer any ***three*** of the following : 5 × 3

   a) Explain various types of hypothesis.

   b) How to formulate the hypothesis ?

   c) Distinction between hypothesis testing and exploratory research.

   d) What are methods/techniques of data collection you used in your hypothesis.

2. Record. 4

3. Viva-Voce. 6

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Draw a suitable geological section along the given line on the map. Interprete the structure and describe the geology of the area (map to be supplied at the time of Exam.). 7

2. Complete the outcrop (map to be given). 4

3. Solve the numerical problem related to dip and strike. (To be given at the time of Exam.). 4

4. Solve the 3-point problem (To be given). 4

5. Lab. Record. 3

6. Viva-Voce. 3

IV-UG-Geog(CC)-VIII (Pr)

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Draw a choropleth map to show the population density variation in Odisha. 7

2. Draw a uniform dot map to represent the population distribution of Balasore district. 6

3. Draw spheres to represent urban population of some urban centres of Odisha. 7

4. Practical Record. 2

5. Viva-Voce. 3

(Data and map to be supplied by the examiners)

❐❐

IV-UG-Anth(CC)-X (Pr)

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. a) Construct a genealogical tree of your family and analyse it. 5

   OR

   b) Prepare a pedigree of your family and analyse it.

2. a) What is observation. Differentiate between participant and non participant observation. 5

   OR

   b) Differentiate between direct and indirect observation.

3. a) Write two differences between a questionnaire and a schedule. Prepare a questionaire for a survey. 5

   OR

   b) What is interview ? Differentiate between structured and unstructured interview.

4. Record. 4

5. Viva-Voce. 6

❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Prepare a map to show the major cultural realms of the world. 8

2. Show that distribution of major tribes in India by dot method. 6

3. Prepare a choropleth map to show the distribution scheduled caste population in India. 6

4. Practical Record. 2

5. Viva-Voce. 3

(Map and data to be supplied by the examiners)

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Identify the given fossils mentioning their important morphological characters. (F_1-F_5) 10

2. Draw and label the given fossils (F_6-F_7) 6

3. Arrange the given fossil in chronological order. 2

4. Lab. Record. 3

5. Viva-Voce. 4

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Calculate mean, median and mode values for the given data. 8
   (Data be given)

2. Find out compactness of the given data. 6
   (Data to be given)

3. Find the correlation co-efficient of the given data sets by ranking method. 6
   (Data to be given)

4. Practical Record. 2

5. Viva-Voce. 3

IV-UG-Geog(CC)-IX (Pr)

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Calculate mean, median and mode values for the given data. 8
   (Data be given)

2. Find out compactness of the given data. 6
   (Data to be given)

3. Find the correlation co-efficient of the given data sets by ranking method. 6
   (Data to be given)

4. Practical Record. 2

5. Viva-Voce. 3

V-26-0.2 ❐❐

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Answer any ***two*** of the following : 9×2

   a) A sample of 30 students is to be drawn from a population consisting of 300 students belonging to two colleges A and B. The means and standard deviations of the marks are given below :

	Total Number of students(Ni)	Mean ($\bar{Y}_{Ni}$)	Standard Deviation (σ_i)
College A	200	30	10
College B	100	60	40

   How would you draw the sample using proportional allocation techniques ? Hence obtain the variance of estimate of the population mean and compare its efficiency with simple random sampling without replacement.

b) Consider a population of 6 units with values 1, 2, 3, 4, 5, 6. Write down all possible samples of 2 (without replacement) from this population and varify that sample mean is an unbiased estimate of the population mean.

Also calculate its sampling variance and verify that :

i) it agrees with the formula for the variance of the sample mean

ii) this variance is less than the variance obtained from sampling with replacement.

c) The data in the given table are for small artificial population which exhibits a fairly steady rising trend. Each column represents a systematic sample and the rows are the strate. Compare the precision of systematic sampling, random sampling and stratified sampling.

Data for 10 systematic samples with

$n = 4,\ k = 10,\ N = nk = 40.$

d) An experienced farmer makes an eye estimate of the weight of peaches xi, on each tree in an orchard of N = 200 trees. He finds a total weight

of X = 11,600 lb. The peaches are picked and weighed on a simple random sample of 10 trees, with the following results.

Tree Number

	1	2	3	4	5	6	7	8	9	10	Total
Actual wt. y	61	42	50	58	67	45	39	57	71	53	543
Est.wt. x	59	47	52	60	67	48	44	58	76	58	569

As an estimate of the total actual weight Y, we take $\hat{Y} = N\,\overline{X} + (\overline{Y} - \overline{X})$

Compute the estimate and find its standard error.

2. Record. 3

3. Viva-Voce. 4

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Answer any ***two*** of the following : 9×2

   a) Fit a straight line trend to the following data by the method of least squares and obtain two monthly trend values for Nov. 2000 and Sept.2001.

Year	*Average Monthly Profit (Crores Rs.)*
1996	12.6
1997	14.8
1998	18.6
1999	14.8
2000	16.6
2001	21.2
2002	18.0
2003	17.4
2005	15.8

b) Calculate Seasonal Indices by the "Ratio to Moving Average Method" from the following data.

Year	*I Quarter*	*II Quarter*	*III Quarter*	*IV Quarter*
2012	68	62	61	63
2013	65	58	66	61
2014	68	63	63	67

c) From the following data calculate price index number for 2016 with 2010 as base by

i) Laspeyre's method

ii) Paasche's method

iii) Marshall-Edgeworth method

iv) Fisher's ideal method.

Commodities	*2010*		*2016*	
	Price	*Quantity*	*Price*	*Quantity*
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

d) Given below are two sets of indeces one with 2009 as base and the other with 2012 as base :

Year	*Index(Old)*	*Index(New)*
2009	100	--
2010	130	--
2011	170	--
2012	200	100
2013	--	120
2014	--	115
2015	--	125

Splice the new series (2012 as Base) to old series (2009 as Base) so as to have a continuous series from 2009 upto date. You are also to prepare a combined series with 2012 as base.

2. Record. 3

3. Viva-voce. 4

c) Suppose 220 misprints are distributed randomly through out a book of 200 pages. Find the probability that a given page contains :

i) No misprints

ii) one misprint

iii) 2 misprints

iv) 2 or more misprint.

(Given $e^{-1.1} = 0.33287$)

d) If X is a normal variate with mean 30 and S.D. 5. Find :

i) $P(26 \leq x \leq 40)$

ii) $P(X \geq 45)$

iii) $P(|X - 30| > 5)$

2. Record. 3

3. Viva-Voce. 4

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Answer any ***two*** of the following :

a) Fit a binomial distribution to the following data :

X :	0	1	2	3	4
Y :	28	62	46	10	4

b) An Urn contains 5 white, 7 red and 8 black balls. If your balls are drawn one by one with replacement, what is the probability that :

i) All are white ?

ii) Only 3 are white ?

iii) None is white ?

iv) At least three are white ?

only as good as the old system or whether the new system is more effective.

c) The following is an arrangement of men M and women W lined up to purchase tickets for a rock concert :

M W M W M M M W M W M M M W W M M M

M W W M W M M M W M M M W W W

M W M M M W M W M M M M W W M

Test for randomness at the 0.05 level of significance.

d) In random sampling from normal population $N(\mu, \sigma^2)$, find maximum likelihood estimator for

i) μ when is σ^2 is known

ii) σ^2 when μ is known

iii) The simultaneous estimation of μ and σ^2.

2. Record. 3

3. Viva-Voce. 4

2017

Full Marks - 25

Time - 6 Hours

The figures in the right-hand margin indicate marks

Answer ***all*** questions

1. Answer any ***two*** of the following : 9×2

a) $x_1, x_2 \ldots\ldots x_3$ be a random sample of size n from the normal population with mean μ and variance σ^2, where μ and σ^2 are unknown. Test if the mean of a normal population has a specified value.

b) To determine the effectiveness of a new traffic control system, the numbers of accident that occured at a random sample of ten dangerous intersections during the four weeks before and the four weeks following the installation of the new system were observed and the following data were obtained :

3 and 1, 4 and 2, 2 and 3, 5 and 2, 3 and 3

2 and 0, 3 and 2, 6 and 3, 1 and 2, 1 and 0

use the sing test at the 0.05 level of significance to test whether the new traffic control system is