Programme: Research Programme   Session: 2021-22
Semester: Course work   Max. Time: 3 Hours
Course Title: Research and Publication Ethics   Max. Marks: 60
Course Code: CUHCL0101C2002

Instruction:
Attempt any five questions out of the following. Each question carries equal marks.
निर्देश: निम्नलिखित में से किसी भी पांच प्रश्नों का उत्तर दे। प्रत्येक प्रश्न का समान अंक है।

Q:1. How does scientific misconduct affect the research and publication activities? Discuss in the context of falsification, fabrication and plagiarism. (12 marks)
प्र: 1. वैज्ञानिक कदाचार कैसे अनुसंधान और प्रकाशन गतिविधियों को बाधित करता है? मिथ्याकरण, छलरचना और साहित्यिक चोरी के संदर्भ में चर्चा कीजिए।

Q.2. Write a detailed note on salami slicing, duplicate and overlapping publications. (12 marks)
प्र:2. सलामी स्लाइसिंग, प्रतिरूप और अतिव्याप्त प्रकाशनों पर एक विस्तृत टिप्पणी लिखें।

Q.3. Discuss the advantages and disadvantages of plagiarism detection software with relevant examples. (12 marks)
प्र:3. साहित्यिक चोरी का पता लगाने वाले सॉफ्टवेयर के फायदे और नुकसान पर प्रासंगिक उदाहरणों के साथ चर्चा करें।

Q:4. What is conflict of interest? How should a researcher avoid conflict of interest in research and publication activities? (12 marks)
प्र:4. हितों के टकराव क्या है? एक शोधकर्ता को अनुसंधान और प्रकाशन गतिविधियों में हितों के टकराव से कैसे बचना चाहिए?

Q.5. Explain the importance of best practices, standard setting initiatives and guidelines in the domain of research and publication with special reference to COPE and WAME. (12 marks)
प्र:5. कोप और वेम के विशेष संदर्भ में अनुसंधान और प्रकाशन के क्षेत्र में सर्वोत्तम प्रथाओं, मानक सेटिंग पहल और दिशानिर्देशों के महत्व की व्याख्या करें।

Q:6. Write a detailed account on Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP and Cite Score. (12 marks)
प्र:6. प्रतिका के प्रभाव कारक के संदर्भ में प्रतिका उद्धरण रिपोर्ट, एसएनआईपी, एसजेआर, आईपीपी और साइट स्कोर के बारे में एक विस्तृत लेख लिखें।

Q:7. Write short notes on any *two* of the following topics: (6x2=12 marks)
प्र:7. निम्नलिखित में से किसी **दो** विषयों पर संक्षिप्त लेख लिखें:
   a) Moral philosophy and moral judgements   अ) नैतिक दर्शन और नैतिक निर्णय
   b) Article processing charges   ब) लेख प्रसंस्करण शुल्क
   c) Complaints and appeals   ख) शिकायतें और अपील
   d) Journal finders   ड) प्रतिका फाइंडर्स

Q:8. Write short notes on any *two* of the following topics: (6x2=12 marks)
प्र: 8. निम्नलिखित में से किसी **दो** विषयों पर संक्षिप्त लेख लिखें:
   a) Authorship issues in publishing   अ) प्रकाशन में लेखकत्व के मुद्दे
   b) Identification of predatory publishers   ब) शिकारी प्रकाशकों की पहचान
   c) Open access initiatives   ख) ओपन एक्सेस पहल
   d) SHERPA/RoMEO   ड) शेरपा / रोमियो

CENTRAL UNIVERSITY OF HARYANA

<u>Term End Examinations, June 2022</u>

Programme: M.Phil/PhD Political Science

Session: 2021-22

Semester: **Course Work**   **Max. Time: 3 Hours**

Course Title: Theory and Methods of Research in Social Sciences   **Max. Marks: 70**

Course Code: SSHPOS02 (201) C6006

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.

2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. Explain briefly any four of the following terms: (4X3.5=14)
   a) Constructivism

   b) Quantitative research

   c) Paradigm

   d) Realism

   e) Epistemology

   f) Grounded Theory

   g) Research Problem

Question No. 2.   (2X7=14)

   a) What is cycle of research? Discuss in the light of inductive-deductive complementarity.

   b) What is Literature Review? What is its purpose and significance?

   c) What is the meaning of a paradigm? Explain the phenomena of 'paradigm shift' with examples.

Question No. 3.   (2X7=14)

   a) Explain the meaning and significance of mixed methods research?

   b) What is the difference between basic and applied research? Give examples.

   c) What are the characteristics of scientific research?

Question No. 4.   (2X7=14)

   a) Explain briefly the following qualitative research methodologies: participant observation, fieldwork, ethnography, unstructured interviews, life histories, textual analysis, and discourse analysis.

   b) Elaborate the three levels of research: Exploratory, Descriptive and Explanatory Research

   c) Differentiate between (a) radical structuralism and functionalism (b) Radical humanism and interpretivism

Question No. 5.   (2X7=14)

a) Explain the meaning of Independent, Dependent, Mediating and Moderating variables? How each one of them is used in research design.

b) Differentiate between Hypothesis-Generating Research and Hypothesis-Testing Research. Give examples.

c) Explain the notion of validity in social science research. Differentiate between Internal and external validity.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, June 2022

Programme: M.Phil/PhD Political Science

Session: 2021-22

Semester: Course Work   **Max. Time: 3 Hours**

Course Title: Theory and Methods of Research in Social Sciences   **Max. Marks: 70**

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   c) Paradigm
   d) Realism
   e) Epistemology
   f) Grounded Theory
   g) Research Problem

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   b) Elaborate the three levels of research: Exploratory, Descriptive and Explanatory Research
   c) Differentiate between (a) radical structuralism and functionalism (b) Radical humanism and interpretivism

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b) Differentiate between Hypothesis-Generating Research and Hypothesis-Testing Research. Give examples.

c) Explain the notion of validity in social science research. Differentiate between Internal and external validity.

Programme: RP (Electrical Engineering)   Session: 2021-22
Semester: Course work   Max. Time: 3 Hours
Course Title: Renewable Energy Generation and Storage   Max. Marks: 60
Course Code: SOET EE 020103E4004

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 (A) Write short note on Indian Ministry of New and Renewable Energy (MNRE) department policies for promotion of Wind and Solar energy.   (6)

   (B) List the various non conventional energy resources. Given their availability, relative merits and demerits in Indian context.   (6)

Q:2 (A) Explain the construction and function of main components of flat-plate solar collector.
   (6)

   (B) Explain characteristics of solar PV cell.   (6)

Q:3 (A) What is the role of wind energy in electricity market? Explain the type of wind turbine. (6)

   (B) Explain Wind Energy Conversion System (WECS). What are the basic components?   (6)

Q:4 With the help of diagram explain the layout and working of the Gas turbine plant.   (12)

Q:5 What is the difference between super capacitor and battery? Which type of materials used in super capacitor? Explain in brief.

 Q:6 (A) When it is needed to test batteries? And explain the testing procedure of battery   (6)

   (B) How are batteries recycled and why? Explain in details.   (6)

Q:7 (A) Explain importance of power quality in smart grid & how it can be improved.   (6)

   (B) Compare Micro-grid and Smart Grid.   (6)

Q:8 (A) Explain how the reliability of smart grid can be enhanced by integrating intelligent electronic devices (IEDS) in to it.   (6)

   (B) Explain how automatic meter reading can make the system smarter.   (6)

CENTRAL UNIVERSITY OF HARYANA

Programme: Research Programme (Nutrition Biology)

Semester: Course work   Max. Time: 3 Hours

Course Title: Advances in Nutritional Genomics and Metabolomics   Max. Marks: 60

Course Code: SIAS NB 02 01 01 DCEC 4004

Instructions:

Attempt any five questions out of the following. Each question carries equal marks.

Q.1. What is nutritional genomics. Explain role of carbohydrates and lipids in gene regulation. (12 marks)

Q.2 . Define proteomics. Explain in detail about genetic control of metabolic pathways. (12 marks)

Q.3. Write notes on the following topics :   (6 X2 = 12 marks)

    a.   Metabolic flux analysis

    b.   Metabolic engineering

Q.4. Briefly describe the role of nutritional genomics and metabolomics in obesity and type 2 diabetes. (12 marks)

Q.5. Discuss in detail the biological network and their significance at the level of transcriptome and fluxome.   (12 marks)

Q.6. Write notes on the following topics :   (6 X2 = 12 marks)

    a.   Analytical methods for detecting and quantifying metabolites.

    b.   Metabolomics in nutrition research

Q.7. Explain in detail about the various methods of analysis of metabolomics resources. (12 marks)

Q.8 Write a detailed note on opportunities and challenges in nutritional genomics and metabolomics. (12 marks)

Programme: Ph.D. (Physics)

Semester: Course work

Course Title: Experimental Methods

Course Code: SPMS PHY 02 102 DCEC 5106

Session: 2021-22

Max. Time: 3 Hours

Max. Marks: 60

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 Select any instrument or piece of equipment requiring high vacuum during operation (e.g., sputtering system, electron microscope, Auger spectrometer). Sketch the layout of the vacuum-pumping/measuring components within the system. Explain the pumping sequence. (12 marks)

Q:2 Explain the principle and working of Pirani and Penning gauge. (12 marks)

Q:3 What are Homogeneous and Heterogeneous nucleation? Derive an expression for critical radius required for homogeneous nucleation, with free energy curve. (12 marks)

Q:4 Write a note on Sputtering technique. (12 marks)

Q:5 What is the principal of Auger Spectroscopy technique, describe it in detail and its application in surface science. (12 marks)

Q:6 (A) what is glancing angle incidence XRD, how is it used to study thin films? (B) A beam of X-rays of wavelength 0.071 nm is diffracted by (110) plane of rock salt with lattice constant of 0.28 nm. Find the glancing angle for the second-order diffraction. (12 marks)

Q:7 With a schematic diagram of SEM explain the function of various components, working principal of SEM and its applications. How it is different from SEM. (12 marks)

Q:8 What is AFM? Explain its instrumentation and working principal with neat diagram. Also discuss what you can and can't do with AFM? (12 marks)

Programme:	PhD	**Session:**	2021-22
Semester:	Course work	**Max. Time:**	3 Hours
Course Title:	Contemporary Issues in Management	**Max. Marks:**	60
Course Code:	SLM MGT 03 102 C 6006		

Instruction: *Attempt any five questions out of the following. Each question carries equal marks.*

Q:1. Discuss evolution of management as a distinct discipline with role of different schools of thought in chronological order. (12 marks)

Q.2. Define stress management. What are different sources of stress? As a corporate leader how will you manage stress among your employees? (12 marks)

Q.3. Discuss the relevance of 'Social Media Sentiment Analysis' in marketing. How brands are using it? Discuss any two examples where a brand might have benefited from social media sentiment analysis. Explain. (12 marks)

Q:4. Should a company give equal emphasis to each and every customer in context of customer relationship management? If yes, why, if no, why not? Explain with example, how customer relationship management can help marketer. (12 marks)

Q:5. Given that current F& O price of equity shares of Beta Ltd is Rs 1,000. It is expected that there will be major price fluctuation in near future.

As an option trader which strategy will you adopt and how this strategy will give pay offs if Call and put option is available at a premium of Rs 50 per trade. Calculate pay offs if price on expiration day is; A) Rs 850 B) Rs 900 C) Rs 950 D) 1,000 E) 1,050 F) Rs 1,100 G) Rs 1,150 H) Rs 1,200
(12 marks)

Q:6. Define Corporate Governance. Discuss eligibility, selection and remuneration provisions for independent directors of company. (12 marks)

Q:7. It is said that supplier should be treated as part of a company, not as an independent entity. Do you believe in the statement? If yes, why, If no, why not? In context of your answer, discuss some examples where your answer can be substantiated. (12 marks)

Q:8. Today, strategic management owe a lot to ancient armies in terms of its evolution. Do you believe in this statement? How do you see strategic management without contribution of ancient armies?. Explain. (12 marks)

Programme: Ph.D(Statistics)   Session: 2021-22
Semester: I   Max. Time: 3 Hours
Course Title: Bayesian Inference   Max. Marks: 60
Course Code: SPMS STAT 02 01 02 E4004

Instruction: Attempt any **five questions** out of the following. Each question carries equal marks.

Q:1 (a) Explain the Jeffreys rule for getting Non-Informative priors.

(b) A city is considering building a new museum. The local paper wishes to determine the level of support for this project, and is going to conduct a poll of city residents. Out of the sample of 120 people, 74 support the city building the museum.
(i) What is the distribution of y, the number who support the building the museum?
(ii) Use a uniform prior for the parameter (p), the proportion of the target audience that supports the museum. What is the posterior distribution of (p)?

Q:2 (a) Show that in Non-Informative prior scale parameters are invariant.

(b) What is Monte Carlo simulation? What is the objective of this?

Q:3 (a) Let $X_1, X_2, \ldots, X_n$ be a random sample drawn from exponential distribution with parameter θ. Using prior distribution of θ as a gamma distribution (b, a). Find out the Bayes estimate of θ and θ^2.

(b) Explain the important characteristics of the mixtures of conjugate priors.

Q:4 (a) Derive the methodology of uniformly best decision rule.
(b) Define the following terms: (i) Risk function (ii) Admissible decision rule.

Q:5 (a) How to obtained the random numbers from exponential distributions?

(b) Let $f(x|)$ $f(x|\lambda) = \dfrac{1}{\lambda}$, $0 < x < \lambda$ and the prior $g(\lambda) = \lambda \exp(-\lambda)$. Obtain, (i) Bayes estimator $\lambda^* = E(\lambda | x)$ (ii) Bayes Risks $R^*(\lambda^*, \lambda)$

Q:6 (a) Explain the concept of classification of prior distribution.

(i) Conjugate prior   (ii) Informative prior

(b) Obtained the methodology to develop reference prior.

Q:7 (a) Explain the concept of parametric and Non-parametric empirical Bayes.

(b) Define the following terms: (i) MCMC simulation (ii) Gibbs sampler.

Q:8 (a) State and prove the Bayes theorem.
(b) Show that posterior mean is the Bayes estimate under squared error loss function.

CENTRAL UNIVERSITY OF HARYANA

Even Semester Term End Examinations June 2022

Programme: Ph. D. Course Work   **Session: 2021-22**

Semester: N/A   **Max. Time: 3 Hours**

Course Title: Individual Differences   **Max. Marks: 60**

Course Code: SAHS PSY 02 01 03 E 4004

Instructions: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 Throw light on identification of Cattellian temperamental traits of personality.(12 Marks)

Q:2 How situational factors influence personality? Discuss. (12 Marks)

Q:3 Explain the nature-nurture issue of intelligence in support of current researches.(12 Marks)

Q:4 Critically evaluate the PASS model of intelligence. (12 Marks)

Q:5 Discuss the "Six P" of creativity. (12 Marks)

Q:6 How psychometric approach explains creativity? Discuss. (12 Marks)

Q:7. Write short notes on any two of the following topics: (6x2=12 marks)

    a) Thematic Apperception Test.

    b) Emotional Intelligence

    c) Alpha and Beta factors of personality

    d) Limitations of Objective Tests

Q:8. Write short notes on any two of the following topics: (6x2=12 marks)

a) Creativity and Openness to Experience

b) How Alternative Five Factor Model is different from Five Factor Model?

c) Tetrad Equation

d) Threshold Hypothesis

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations June 2022</u>

Programme:	Ph.D. Microbiology	**Session: 2021-22**	
Semester:	I	**Max. Time: 3 Hours**	
Course Title:	Microbial Metabolism	**Max. Marks: 70**	
Course Code:	SIAS MB 02 01 02 GEC		

Instructions:

1. Question no. 1 has eight parts and students need to answer any four. Each part carries three and half

Marks.

2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1. Comment on any four of the following
a. Uniport versus Cotransport with explanation of Symport and Antiport
b. Nutrient active transport in microbes
c. Entner-Doudoroff pathway
d. Glyoxylate cycle
e. Polyamine biosynthesis
f. Transamination reaction
g. Secondary metabolites
h. Antibiotics production

(4X3.5=14)

Q 2.

a. Outline the classification of microbes with definition and examples based on energy source, carbon source and source of reducing power. Differentiate between aerobic, anaerobic and fermentative metabolism. (3+4)

b. What is generation time 'g' and growth rate 'R' for bacterial growth. Derive the mathematical relationship between generation time (g) initial population (N_0) and population at time t (N_t) based on number of generation (n) and growth rate (R). (2+5)

c. Differentiate between continuous, batch and synchronous culture. What is a chemostat and turbidostat. (4+3)

Q 3.

a. Give a flow chart of pentose phosphate pathway along with the enzymes involved in each step. (7)

b. Describe the fundamental reactions catalyzed by the following group of enzymes: Aconitase, Carboxylase Dehydrogenase, Enolase, Epimerase, Isomerase, Kinase, Ligase, Lyase, Phosphatase. What are the advantages of operating Pentose Phosphate pathway in parallel to operative Glycolytic pathway? (5+2)

c. Schematically show glycolytic pathway. Describe the fundamental reactions catalyzed by the following group of enzymes: Phosphorylase, Mutase, Synthase, Synthetase   (5+2)

Q 4.

a. How nitrogen and nitrate gets assimilated? Describe stickland reaction. (5+2)

b. What is nitrogen assimilation. Describe GS-GOGAT pathway with reactions. (1+6)

c. Describe the biosynthetic pathway for Aspertate, Alanine, Serine. (7)

Q 5.

a. Describe different aspects of strain development.   (7)

b. Describe aspects of fermentation of citric acid and lactic acid.   (7)

c. Differentiate between primary and secondary metabolite. Classify secondary metabolites. (2+5)

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, June 2022

Programme: Ph.D.Mathematics
Semester: I^{st} (Course work)
Course Title: Topics in Pure Mathematics
Course Code: SBS MAT 02 01 01 E 5106

Session: 2021-22
Max. Time: 3 Hours
Max. Marks: 60

Instruction: Attempt any *five* questions out of the following. Each question carries equal marks.

Q: 1 State and prove Fatou's Lemma and state Radon-Nikodym theorem .

Q: 2 (a) Prove that the collection of measurable sets is a σ- algebra.

(b) Prove that [0, 1] is uncountable set.

Q: 3 State and prove Hadamard's three circle theorem.

Q: 4 Show that $\frac{\sin z}{z} = \prod_{n=1}^{\infty}(1 - \frac{z^2}{n^2\pi^2})$.

Q: 5 State and prove open mapping theorem.

Q: 6 (a) Give an example which is Banach space but not Hilbert space.

(b) State and prove parallelogram law.

Q: 7 (a) State Banach-Stone theorem and Gelfand Neumark theorem.

(b) Let A be a unital Banach algebra and a ϵ A. Then σ(a) $\neq$ Φ.

Q: 8 (a) Define Banach algebra and give an example.

(b) Give an example which is sub algebra need not be an ideal.

Programme: PhD Mathematics   **Session:** 2021-22

Semester: Course work   **Max. Time: 3 Hours**

Course Title: Topics in Applied Mathematics   **Max. Marks: 60**

Course Code: SBS MAT 02 01 02 E 5106

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q1. Consider a rectangular element (e) with nodes $i = 1, 2, 3, 4$ having coordinates (x_i, y_i). Compute the bilinear(quadratic) shape functions in variables x and y corresponding to each node.

Q2. Find the functional for solving equation the Poisson equation $\nabla^2 u = 3(x + y)$ by Finite Element method in the triangle enclosed by the axes and a straight line $2x + y = 1$. The boundary conditions on the three sides are as given below:

i) x-axis, $\dfrac{\partial u}{\partial y} = -x$.

ii) y-axis, $\dfrac{\partial u}{\partial x} = -y$.

iii) $2x + y = 1$, $u = x + y$.

The domain has been subdivided into three triangular elements as follows:[1]
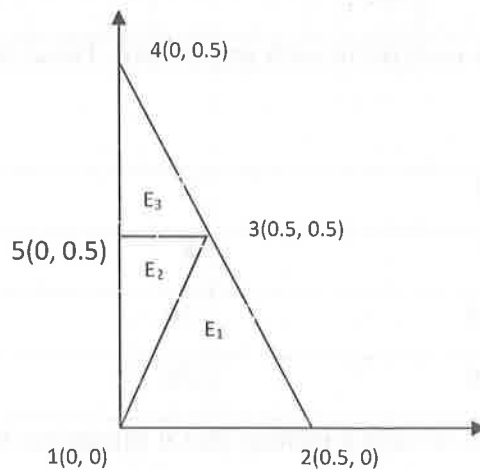
Q3. Use Bender-Schmidt explicit scheme to compute temperature distribution in a uniform insulated rod of length $1m$ with diffusivity constant of the material of the rod is 1. Both ends of the rod are kept at zero temperature, and initial temperature distribution in the rod is $u(x,0) = x(1-x)$. Take $h=1/5$ and $k=0.005$. Compute till $t = 0.02$.

Q4. Find the variational form for the solution of $-\nabla^2 u = g(x,y)$ in R, where R is enclosed by a curve S and it is given that

$$u = f_0(x,y) \text{ on S.}$$

Q5. A company has received a contract to supply gravel to three new construction projects located in towns A, B and C. The construction engineers have estimated that the required amounts of gravel which will be needed at these construction projects are:

Project location	Weekly requirement (Truck loads)
A	72
B	102
C	41

The company has 3 gravel pits located in town X, Y and Z. The gravel required by the construction projects can be supplied by three pits. The amount of gravel that can be supplied by each pit is as follows:

Plant	X	Y	Z
Amount available (Truck loads)	76	82	77

The company has computed the delivery cost from each pit to each project site. These costs are shown in the following table

	A	B	C
X	4	8	8
Y	16	24	16
Z	8	16	24

Schedule the shipment from each pit to each project in such a manner that it minimizes the total transportation cost.

Q6. Solve and geometrically represent the optimal solution of the following LPP

$$\text{Max } Z = x + 2y + 3z \text{ subject to}$$

$$x + 2y + 3z \leq 10$$

$$x + y \leq 5$$

$$x \leq 1$$

$$x, y, z \geq 0$$

Q7. What is the relation between Fourier and Laplace transforms. State convolution theorems for both these transform and find Laplace and Fourier transform of Dirac delta function.

Q8. Explain Shannon's sampling theorem. Find Fourier sine and Cosine transform of x^{n-1}. Hence, deduce that $\frac{1}{\sqrt{x}}$ is self-reciprocal under both the transform. Also find Fourier transform of $\frac{1}{\sqrt{|x|}}$.

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations, June- 2022</u>

Programme: Pre-Ph.D. (Law)
Semester: N/A
Course Title: Contemporary Issues in Law
Course Code: SLM Law 02 102 C 4206

Session: 2021-22
Max. Time: 3 Hours
Max. Marks: 60

Instructions:
1. Attempt any Five Questions out of the total eight questions.
2. All questions carry equal marks.

Q.No. 1 What is the relationship between law and morality? Can law be separated from morality? Discuss in the light of Hart-Dworkin Debate on Law and Morality.

Q.No. 2 What do you mean by Euthanasia? Is Euthanasia an integral part of Right to Life in India? Discuss by citing case laws.

Q.No. 3 Write a critical note on inter-relationship between law and modernization in a developing society like India.

Q.No. 4 What are the emerging issues relating to Real Estate in India? How much and to what extent the emergence of Real Estate (Regulation and Development) Act, 2016 has been able to address these issues.

Q.No. 5 What are various new modes of justice delivery system in India? How much and to what extent, ADR has been able to achieve its objectives till date.

Q.No. 6 Enumerate the modern theories of justice with special reference to Rawls theory of justice. What is the relevance of Rawls theory of justice in present era?

Q.No. 7 What do you mean by Sustainable Development? Discuss about the evolution and development of the Doctrine of Sustainable Development in India by citing Case Laws

Q.No. 8 Write a critical note on Legislative Framework relating to Surrogacy in India.

निर्देश : निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर दीजिये । सभी प्रश्नों के अंक समान हैं ।   (12x5=60)

1. साहित्य के इतिहास की अवधारणा और आवश्यकता की विवेचना कीजिये ।

2. विधेयवादी साहित्येतिहास पद्धति पर सारगर्भित निबंध लिखिये ।

3. हिंदी साहित्य के काल विभाजन पर आलोचनात्मक निबंध लिखिये ।

4. हिंदी साहित्य के इतिहास के पुनर्लेखन की आवश्यकता पर अपना मत प्रकट कीजिये ।

5. आचार्य रामचंद्र शुक्ल के 'हिंदी साहित्य का इतिहास' की समीक्षा कीजिये ।

6. 'दूसरी परंपरा और हजारी प्रसाद द्विवेदी' विषय पर सारगर्भित निबंध लिखिये ।

7. रामविलास शर्मा अथवा नामवर सिंह की इतिहास-दृष्टि पर प्रकाश डालिये ।

8. डॉ. नगेन्द्र अथवा मैनेजर पाण्डेय की इतिहास-दृष्टि को रूपायित कीजिये ।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, June 2022

Programme :Ph.D. (Geography)
Semester : Course Work
Course Title: Advanced Spatial Techniques in Geography
Course Code: SBS GEO 02 01 02 C 3104

Session: 2021-22
*Max. Time: **3 Hours***
*Max. Marks : **60***

Note: Attempt any five questions out of the following. Each question carry equal marks.

Q.1 Write a detailed account of data input, editing, coding, tabulation and graphical presentation in thesis writing.

Q.2 What is sampling? Explain the type and size of sample in research.

Q.3 Write a short note on the utility of the following with suitable examples (any two)-
   (i) Hypothesis Testing (ii) Correlation (iii) Regression

Q.4 Write a short not on the following (any two)-
   (i) Use of SPSS software (ii) Principal Component analysis (iii) Z- Score

Q.5 Explain the type of spatial data and sources of geospatial data.

Q.6 Write a note on thematic mapping.

Q.7 What is image classification? Explain the unsupervised and supervised image and mention the selection of appropriate classification method.

Q.8 Explain the GIS Data Model along with advantages and disadvantages.

Program: Research Program   **Session:** 2021-22

Semester: Course work   **Max. Time:** 3 Hours

Course Title: Advanced Data Structures & Algorithms   **Max. Marks:** 60

Course Code: SOET CS 020102E 4004

Instruction: *Attempt any five questions out of the following. Each question carries equal marks.*

12 X 5 = 60

Q:1. What is a Fibonacci Heap? Explain with the appropriate example. Also discuss the applications of Fibonacci Heap.

Q.2. Explain the properties of the Binomial Tree property. Write an algorithm to find the minimum key in a binomial heap

Q.3. What is Knapsack problem? Find an optimal solution for the fractional knapsack problem $l = <1, 12, 13, 14, 15>$, $w = <5, 10, 20, 30, 40>$, $v = <30, 20, 100, 90, 160>$. The capacity of knapsack $W = 60$

Q.4. Explain NP hard and NP complete problems with appropriate example and also define the polynomial time problems and write a procedure to solve NP problems.

Q:5. Design an AVL tree from the following nodes by inserting nodes one by one. Show all the steps and rotations: 8,9,10,2,1,5,3,6,4,7,11,12

Q:6. Explain Markov Chains with the help of mathematical expressions. Also discuss its advantages and disadvantages.

Q:7. Write short notes on any *three* of the following topics: (4x3=12 marks)

     a) Game-theoretic techniques

     b) Numerical-Probabilistic algorithms

     c) Monte-Carlo algorithms

     d) Lovasz-local lemma

Q:8. Write short notes on any *two* of the following topics: (6x2=12 marks)

     a) String Matching Algorithms

     b) Computational Geometry

     c) Approximation Algorithms

     d) bin packing

CENTRAL UNIVERSITY OF HARYANA

Even Semester Term End Examinations June 2022

Programme: Ph.D. (Civil Engineering)   Session: 2021-22
Semester: First Semester   Max. Time: 3 Hours
Course Title: Condition Assessment and Retrofitting of Structures   Max. Marks: 60
Course Code: SoET- CE 020101 E4004

Instructions:

1. Attempt any five questions out of the following. Each question carries equal marks.

Note: IS 1893:2016 is allowed in the examination.

Q 1.   (4X3=12)

     a) Briefly explain the strengthening of Joints.

     b) Describe the types of failure/ damage in concrete structures.

     c) Differentiate between Capo Test and Limpet test.

     d) Describe the methodology used for selection of repair materials.

Q 2.   (2X6=12)

     a) Define shrinkage in concrete. Classify it and describe the preventive measures to be taken to reduce the shrinkage.

     b) Describe the alkali reaction on concrete with their mechanism.

Q3.   (2X6=12)

     a) Describe about the tests used surface quality of repair material. Also discuss the application of carbon fibers as repair material.

     b) Explain the classification of repair materials with selection criteria.

Q 4.   (2X6=12)

     a) Describe, with the help of neat sketches, strengthening of RC Columns.

     b) What are the principles of earthquake-resistant design of RC buildings?

Q 5.   (1X12=12)

Explain various types of vertical Irregularities in Irregular RCC Buildings with the help of diagrams.

Q6.   (1X12=12)

Plan of a five-storey RCC building is shown in Figure. Dead load including self weight of slab, finishes, etc. can be assumed as 3 kN/m^2 and live load as 2 kN/m^2 on each floor and as 1.5 kN/m^2 on the roof. Determine the lateral forces and shears at different storey levels. Assuming z = 0.24, I = 1, R = 5, soil type =medium, storey height = 3.0 m.
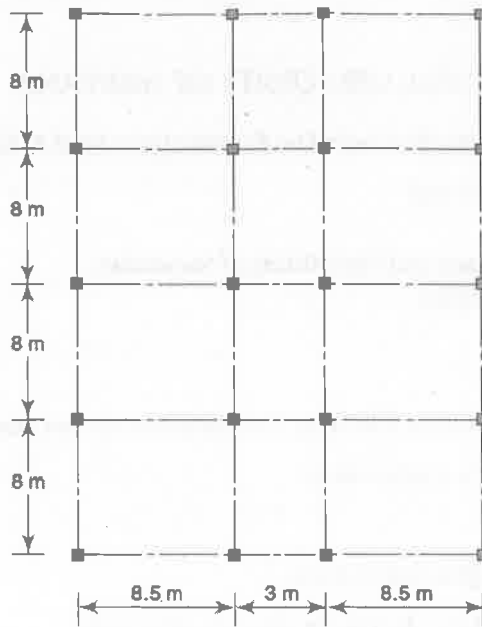
Q7.   **(2X6=12)**

    a) What is ferrocement? Explain about ferrocement jacketing.

    b) What are the possible damages to RC buildings in earthquake-prone regions?

Q8.   **(2X6=12)**

    a) What do you mean by slab jacking technique? Discuss its advantages and limitation.

    b) Describe the ultrasonic pulse velocity method in detail. Also discuss the factors influence the pulse velocity measurements.

Programme: Ph.D. Chemistry   Session: 2022-23

Semester: 1st   Max. Time: 3 H

Course Title: Electroanalytical Techniques for Chemists   Max. Marks: 70

Course Code: SBS CH 030106 E 5016

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1.   (4×3.5=14)

     a) What do you understand by the polarization of metal electrodes? How polarization of electrodes affect different electrochemical phenomena?

     b) Write down the method to find corrosion rate from corrosion current density.

     c) What is the information we obtain from Nyquist and Bode plots?

     d) Write a short note on charge transfer resistance and double-layer capacitance.

     e) Briefly tell the qualitative and quantitative information obtained from the CV.

     f) Briefly explain how biosensors are used in the detection of environmental pollutants.

     g) Write a short note on the optical properties of nanomaterials.

Q 2.   (2×7=14)

     a) Discuss in detail the mixed potential theory to find corrosion rate.

     b) Write down advantages of impedance spectroscopy technique over polarization technique to find corrosion rate.

     c) Write a short note on the following: Stern-Gerry equation, Importance of OCP, and Tafel slopes.

Q3.   (2×7=14)

     a) Briefly describe the theory, principle, and procedure of impedance spectroscopy.

     b) Briefly explain how the structure of an electrified interface can be identified from an equivalent circuit diagram.

     c) Write down applications of impedance spectroscopy in finding corrosion inhibition efficiency.

Q 4.   (2×7=14)

     a) Differentiate between Potentiostatic and Galvanostatic chronoamperometry.

     b) Discuss in detail the theory, principle, and basics of electrochemistry of Cyclic Voltammetry.

     c) Briefly explain how chronoamperometry techniques help in finding the charge-discharge cycle of a rechargeable battery.

Q 5. (2×7=14)

a) Briefly explain the Hydrothermal and coprecipitation method of synthesis of nanoparticles.

b) Write a short not on TEM and DSC techniques for the characterization of nanomaterials.

c) Differentiate between 0D, 1D, and 2D nanomaterials with suitable examples.

CENTRAL UNIVERSITY OF HARYANA

Programme: Ph.D. Course Work   **Session: 2021-22**

Semester: Ist   **Max. Time: 3 Hours**

Course Title: Methodological Perspectives and Techniques of Social Research   Max. Marks: 70

Course Code: SAHS SC 02 201 CC 4105/ SAHS SC 03 301 CC 4105

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1. (Write a short note on any four)   (4X3.5=14)

  a) Society

  b) Subjectivity

  c) Ethnography

  d) Social survey

  e) Research methodology

  f) Social change

  g) Observation

Q 2.   (2X7=14)

  a) What do you mean by science? Is scientific study of society possible? Examine.

  b) Critically examine the nature of Sociology.

  c) What is a social fact? How we can identify social facts in a society? Explain.

Q3.   (2X7=14)

  a) What is positivism? What is the role of positivism in sociology?

  b) How feminist research is different from traditional research? Explain.

  c) Discuss the idea of Garfinkel about Ethnomethodology.

Q 4.   (2X7=14)

  a) What is the importance of social research in sociology? Elaborate.

  b) What do you mean by research design? What are the various types of research design?

  c) What is social research? Elaborate various steps in social research.

Q 5.   (2X7=14)

  a) What do you mean by qualitative research? How qualitative research is different from quantitative research? Which type of research is superior and more useful in sociology? Explain.

  b) Discuss the importance of statistical tools in social science research.

  c) What do mean by questionnaire? How questionnaire is useful in social research? Explain.

CENTRAL UNIVERSITY OF HARYANA

Programme: Ph.D. Course Work   Session: 2021-22

Semester: Ist   Max. Time: 3 Hours

Course Title: Methodological Perspectives and Techniques of Social Research   Max. Marks: 70

Course Code: SAHS SC 02 201 CC 4105/ SAHS SC 03 301 CC 4105

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and students need to answer any two parts of each question. Each part carries seven marks.

Q 1. (Write a short note on any four)   (4X3.5=14)
   a) Book view and filed view.

   b) Social change

   c) Literature review

   d) Content Analysis

   e) Qualitative research

   f) Interview schedule

   g) Content analysis

Q 2.   (2X7=14)

   a) What is objectivity? How subjective is a hindrance to the scientific study of society? Explain.

   b) What do you mean by social science? Is scientific study of society is possible? Explain.

   c) Critically examine the nature of Sociology.

Q3.   (2X7=14)

   a) Discuss the idea of Alfred Schutz about phenomenology.

   b) What is positivism? What is the role of positivism in sociology? Elaborate.

   c) How feminist research is different from traditional research? Explain

Q 4.   (2X7=14)

   d) Discuss the importance of statistical tools in social science research.

   e) What do mean by questionnaire? How questionnaire is useful in social research? Explain.

   f) What do you mean by qualitative research? How qualitative research is different from quantitative research? Which type of research is superior and more useful in sociology? Explain.

Q 5.   (2X7=14)

   d) What do you mean by research design? What are the various types of research design?

   e) What is social research? Elaborate various steps in social research.

   f) What is the importance of social research in sociology? Elaborate.

CENTRAL UNIVERSITY OF HARYANA

<u>Term End Examinations, June 2022</u>

Programme: Ph.D. Chemistry   **Session:** 2021-22

Semester: Course Work   **Max. Time:** 3 Hours

Course Title: Solid State and Supramolecular Chemistry   **Max. Marks:** 60

Course Code: SBS CH 030101 E 5016

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1.
(a) Briefly discuss space groups in triclinic and monoclinic systems. [6 marks]
(b) Describe symmetry operations and symmetry elements of BH_3 molecule. [6 marks]

Q:2.
(a) Calculate miller indices of a plane which cut off intercepts in the ratio 3a:b:-2c along x, y and z-axis where a, b and c are primitives. [6 marks]
(b) What are miller indices of a plane that intercepts the x-axis at a, the y-axis at 2a and z-axis at 2a. [6 marks]

Q:3.
(a) What are K_α and K_β lines in X-Ray emission? Draw and explain the position of these lines in the relative intensity versus wavelength plot. [2+2 marks]
(b) Write a note on the Bragg's law with the derivation of the relation between path length and the reflected angle. [5 marks]
(c) Define reciprocal lattice. What would be the reciprocal lattice of a BCC lattice? [2+1 marks]

Q:4.
(a) Write a note on the X-ray generation in XRD technique. [3 marks]
(b) Write down name of two commonly used target metals in XRD along with their wavelengths [2 marks]
(c) What are Ewald's sphere and the sphere of reflection? Deduce the concept of Ewald's sphere from Bragg's law. [3+4 marks]

Q:5.
(a) How inter ligand hydrogen bonds stabilized the supramolecular architecture in metal complexes? Explain with examples. [6 marks]
(b) Illustrate π-stacking and C-H---π interactions with suitable examples and discuss their relative importance. [6 marks]

Q:6.
(a) Explain the role of supramolecular chemistry in the development of nanoscience and technology. [6 marks]
(b) What does mean by supramolecular dynamics? Explain with an appropriate example. [6 marks]

Q:7.
(a) Explain the concept of molecular recognition in the context of supramolecular chemistry. What is a supermolecule? [4+2 marks]
(b) What are crown ethers? Discuss the selectivity properties of crown ethers towards various alkali metal cations. [6 marks]

Q:8.
(a) Write a short note on anion recognition and anion coordination chemistry. [6 marks]
(b) What are molecular machines? Discuss the molecular switching properties of 1,2-dithienylethene based compounds and its application in memory storage. [6 marks]

QUESTION PAPER PATTERN
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, June 2022

Programme: Ph.D. in Physical Education   **Session:** 2021-22
Semester : Course work   **Max. Time:** 3 Hours
Course Title: Scientific Principles of Sports Training   **Max. Marks:** 60
Course Code: SOE PHE 02 01 03 E3024

Instruction: Attempt any five questions out of the following. Each question carries 12 equal marks.

Q:1 Explain the causes, symptoms and tackling of overload?

अतिभार के कारणों, लक्षणों और निवारण के बारे में बताएं?

Q:2 What are the principles of load, adaptation of load and the judgment of load?

भार के सिद्धांत, भार का अनुकूलन और भार का निर्णय क्या हैं?

Q:3 Explain the types of Strength and the methods to improve Strength?

शक्ति के प्रकार और शक्ति को बेहतर बनाने के तरीके बताएं?

Q:4 Illustrate the types of flexibility and the methods to improve flexibility?

लचीलेपन के प्रकार और लचीलेपन में सुधार के तरीकों का वर्णन करें?

Q:5 Explain the following training methods in details.

निम्नलिखित प्रशिक्षण विधियों को विस्तार से समझाइए।

     a) Fartlek Training फार्टलेक प्रशिक्षण
     b) Repetition training दोहराव प्रशिक्षण

Q:6 Illustrate the importance and methods of tactical training?

सामरिक प्रशिक्षण के महत्व और विधियों का वर्णन करें?

Q:7 What do you understand by periodization and also explain its types?

अवधिकरण से आप क्या समझते हैं और इसके प्रकारों की व्याख्या करें?

Q:8 Explain in detail the factors influencing sports performance?

खेल प्रदर्शन को प्रभावित करने वाले कारकों का विस्तार से वर्णन करें?

CENTRAL UNIVERSITY OF HARYANA
End Semester Examinations June 2022

**Programme: PhD Biotechnology**
Semester: Course work
Course Title: Omics Technologies
Course Code: SIAS BT 2 1 04E 4004

Session: 2021-22
Max. Time: 3 Hours
Max. Marks: 60

Instructions:
Answer any five questions. All questions carry 12 marks.

1. What is meant by next generation sequencing techniques? Explain in brief about different applications of genomics. **(12 marks)**

2. Name one example of tool used for – pathway mapping, GO analysis, miRNA identification, de novo assembly, reference based assembly, differential expression analysis, development of heatmaps. Outline the main steps involved in Illumina library preparation for whole transcriptome study. **(12 marks)**

3. Consider following pipeline for genome assembly starting from the input file containing raw reads:
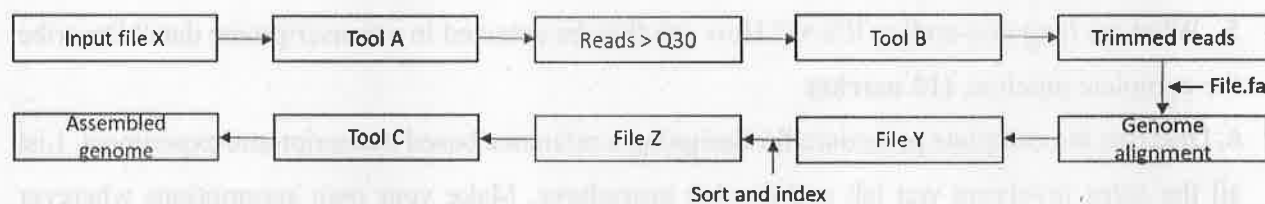
a) What are the file formats for files X, Y, and Z files? Give one example each for tools A, B, and C?

b) What kind of file would File.fa be? What kind of metrics can be used for assessment of assembly quality?

c) Name at least three different sequencing platforms and classify as short or long read technologies. **(4 x 3 = 12 marks)**

4. Following methodology was followed during a transcriptomics experiment carried out in a crop plant maize. Read the paragraph and answer the questions given below.

Total RNA extraction and **Poly(A)** RNA isolation were performed according to the manufacturer's protocol (Invitrogen). RNA-seq libraries were prepared according to the Illumina standard instructions (TruSeq Standard RNA LT Guide), followed by a quality check with the Agilent 2100 bioanalyzer, and sequenced on the Illumina HiSeq 3000 platform according to the manufacturer's instructions (HiSeq 3000 User Guide) by Nanjing Vazyme-Bio, in order to generate 150 bp paired-end reads. **High-quality reads** were aligned to **Ensembl** plants release-30 zea–mays genome build Zea_mays. AGPv3.26. The unique reads were **normalized** as reads per kilobase of exon model per million mapped reads using Samtools v0.1.19. Differentially expressed genes (DEGs) were defined as those with the **fold change** (FC) of the expression level (FC ≥ 2 or FC ≤ 0.5 under P-value ≤ 0.05, FDR ≤ 0.05) in the test transcriptome compared to the expression level in the control transcriptome.

a) What is the significance of Poly(A) in this experiment?

b) What is meant by high-quality reads here and how are they obtained from raw data?

c) What is the significance of Ensembl? What are the other databases that be used for this purpose?

d) Why were the reads normalized?

e) What is meant by fold change?

f) What are the different tools for its calculation? **(6 x 2 = 12 marks)**

5. What are long non-coding RNAs? How can they be detected in a transcriptome data? Describe the complete pipeline. **(12 marks)**

6. Describe the complete procedure for designing a reference based transcriptome experiment. List all the steps involving wet lab and dry lab procedures. Make your own assumptions wherever required. **(12 marks)**

7. Describe in details the principle of mass spectrometry, major components of a MS and its applications in modern biology. **(12 marks)**

8. Discuss the importance of metabolomics, listing its major applications and main steps involved in metabolomics studies. **(12 marks)**

हरियाणा केंद्रीय विश्वविद्यालय, महेंद्रगढ़

सत्रांत परीक्षा, जून 2022

कार्यक्रम : **पीएच. डी. (हिंदी)_कोर्स वर्क**
सेमेस्टर : **प्रथम**
पाठ्यक्रम शीर्षक : **शोध प्रविधि**
पाठ्यक्रम कोड : **SHSS HND 01 C 101**

सत्र : **2021-22**
समयावधि : **3 घंटे**
अधिकतम अंक : **60**

निर्देश : दिए हुए प्रश्नों में से कोई पांच प्रश्न कीजिए. सभी प्रश्नों के अंक समान हैं.

1. शोध का अर्थ समझाते हुए शोध और आलोचना में अंतर स्पष्ट कीजिए.

   (12)

2. शोध के प्रमुख तत्त्वों के बारे में बताइए.

   (12)

3. तुलनात्मक शोध पर एक संक्षिप्त नोट लिखिए.

   (12)

4. शोध की विभिन्न पद्धतियों के बारे में बताइए.

   (12)

5. शोध-सामग्री के प्रलेखीकरण में कौन-कौन सी सावधानियां बरतनी चाहिएं ?

   (12)

6. ग्रंथ सूची के निर्माण के प्रमुख बिंदुओं पर प्रकाश डालिए.

   (12)

7. 'संचार क्रांति और साहित्यिक शोध' पर एक नोट लिखिए.

   (12)

8. हिंदी में शोध की समस्याओं पर विचार कीजिए.

   (12)

Programme: PhD   **Session: 2021-22**
Semester: Course work   **Max. Time: 3 Hours**
Course Title: Research Methodology   **Max. Marks: 60**
Course Code: SBS GEO 02 01 01 C 3104

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q. 1 What is research? Explain the types of research approaches.

Q. 2 Explain the significance of literature review in research report.

Q. 3 Explain the type and stages of a good research design.

Q. 4 What is sampling? Explain the types of sampling techniques with suitable examples.

Q. 5 How to construct a good questionnaire? Discuss the important component of a good questionnaire.

Q. 6 Write short notes on any two of the following topics:

(i)   Types of observation
(ii)   Types of field survey

Q:7 Discuss the structure and components of scientific reports.

Q:8 How to write a good research proposal? Explain the steps with suitable example.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, June 2022

Programme: Ph.D. (Pharmaceutical Sciences)   Session: 2021-22

Semester: 1st (Pre-PhD Course work)   Max. Time: 3 Hours

Course Title: CNS Pharmacology   Max. Marks: 60

Course Code: SIAS PS 01 01 04 E 4004

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

1. Discuss the involvement of *G proteins* and *adenylate cyclase* in signal transduction and the role of transcription factors.   (12)

2. Give a detailed note on pharmacological significance of *tyrosine receptor kinases* and *steroid receptors*.   (12)

3. Explain the role of neuronal plasticity in memory formation. Write a note on hippocampal physiology.   (12)

4. Explain the cellular and molecular mechanisms underlying the pathophysiology of *Alzheimer's disease*.   (12)

5. Describe the pathophysiology of *Ischemic Brain injury*. Explain the neuropathology of dementias.   (12)

6. Write a descriptive note on Epigenetic influences on Brain disorders.   (12)

7. Write the principle of animal Models for the preclinical drug screening of *Parkinsonism* and *antipsychotics*.   (12)

8. Describe the principle of animal Models for the preclinical drug screening of *anti-epileptics* and *Nootropics*.   (12)

Programme: **Ph.D. (English) Course Work**   Session: **2021-22**

Semester: **First**   Max. Time: **3 Hours**

Course Title: **Contemporary Literary Thought and Critical Approaches**

Course Code: **SLLCH ENG 03 01 C 02 5106**   Max. Marks: **60**

Instruction: Attempt any **five** questions out of the following. Each question carries equal marks.

Q 1.   Write short notes the following:
   a) Neo-Colonialism/ Neo- Imperialism
   b) Abrogation
   c) Tribal literature
   d) Importance of memory in *Legends of Pensam* by Mamang Dai

Q .2. What do you understand by Diaspora? Examine V. S Naipaul's *A House for Mr. Biswas* as a diasporic text.

Q.3. Bill Ashcroft in his book *The Empire Writes Back* discusses about four critical models of Post-Colonial Literature. Name all four of them and briefly explain any two with their proponents and movements.

Q.4. What do you understand by Dalit Aesthetics? Write a detailed note with reference to the text prescribed in your syllabus.

Q.5. Discuss *Legends of Pensam* by Mamang Dai as a Tribal text from North-East India.

Q.6. Describe *Rasa* as theory of literary experience.

Q.7. Discuss Russian Formalism and New Criticism.

Q.8. Write a detailed note on *Vakrokti Siddhanta*.

Examination: ...

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q.1   Write short note on the following:

a. ... Resistance new cosmopolitan

b. Alienation

c. Hind Swaraj

d. Importance of memory in Legends of Palestine by Ghassan Dar

Q.2 What do you understand by Diasporic literature? ... Nayar and ... Moraga ...
as a diasporic text.

Q.3 Bill Ashcroft in his book Post-Colonial Studies Reader discusses about four textual models of Post-Colonial Literature. Name all four of them and describe/explain any two with their proponents and movements.

Q.4 What do you understand by Dalit Aesthetics? Write a detailed note with reference to the text prescribed in your syllabus.

Q.5 Discuss Legends of Palestine by Ghassan Dar as a Tribal text from North-East India.

Q.6 Describe Raju as theory of literary expression.

Q.7 Discuss Russian Formalism and New Criticism.

Q.8 Write a detailed note on Dalit and Feminism.

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations June 2022

Programme: PhD Biochemistry	**Session: 2021-22**
Semester: 1	**Max. Time: 3 Hours**
Course Title: Advanced Biochemistry	**Max. Marks: 60**
Course Code: SIAS BC 02 01 01 E 4004	

Instructions: Attempt any five questions. Each question carries equal marks.

Q 1. What is the difference between substrate level phosphorylation and oxidative phosphorylation? How many ATP are synthesized on complete oxidation of one glucose molecule during aerobic respiration.

Q 2. What is beta-oxidation of fatty acids? How many ATP are synthesized on complete oxidation of palmitic acid?

Q 3. Describe various levels of protein structure and forces stabilizing proteins.

Q 4. What is enzyme inhibition? Describe various enzyme inhibition mechanisms.

Q 5. Define super secondary structure of proteins with different examples. Also, explain the Ramachandran Plot.

Q 6. Describe various databases of nucleotides and proteins and their applications with examples.

Q 7. Write down various cells of immune system along with their functions.

Q 8. Describe different types of plant tissue culture and their applications.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, June 2022

Programme: Ph.D. (Pharmaceutical Sciences)   Session: 2021-22

Semester: 1st (Pre-Ph.D. Course work)   Max. Time: 3 Hours

Course Title: Research Methodology   Max. Marks: 60

Course Code: SIAS PS 01 01 01 C 4004

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

1. "Research should be systematic" Justify the statement. Give a detailed note on the use of tools for searching literature through electronic databases. (12)

2. What do you mean by Research? Classify different types of research with the help of suitable examples. (12)

3. What is a Research Design? Discuss different statistical tools useful for analyzing the significance. (12)

4. Write the significance of a Research Design. Describe different methods of recording observations and documentation. (12)

5. Enlist the responsibilities and functions of IBSCs. Write down the constitution of IBSC. (12)

6. Write a descriptive note on Safety practices and disposal of Bio-waste in the laboratory. (12)

7. Describe in brief the layout of a research article, covering all relevant points. (12)

8. What do you mean by Intellectual property rights? Discuss various electronic tools for bibliographic formatting and checking Plagiarism. (12)

CENTRAL UNIVERSITY OF HARYANA

Even Semester Term End Examinations June 2022

Programme: Ph.D. English   Session: 2021-22

Semester: Course Work (I)   Max. Time: 3 Hours

Course Title: Research Methodology   Max. Marks: 60

Course Code: SLLCH ENG 03 01 C 01 3104

Instructions: Attempt any **five** questions out of the following. Each question carries equal marks.

Q. 1 How reliable do you think is the information obtained through interviews and questionnaires? Give reasons pro and contra in your own words.   (12 marks)

Q. 2. What does literary research constitute and how relevant is it in a society which largely depends on science and technology for knowledge? Offer your views.   (12 marks)

Q. 3. Write an essay on the significance of non-sexist language usage in academic writing.

                                               (12 marks)

Q. 4. Is there a psychoanalytical literary theory in the sense of psychoanalysis making general observations about the nature of literature? Comment with examples.   (12 marks)

Q. 5. What are "proof" and "evidence" and what is their role in research in literary studies? Explain.   (12 marks)

6. Write a formal review of a book you have read recently.   (12 marks)

Q. 7. Attempt any two of the following questions: (6x2=12 marks)

    a) Arrange the following in MLA style.

Author: Jonathan Swift	Year: 2003	Publisher: Penguin	Book: Gulliver's Travels					

		Classics					
Article: Truth and Meaning	Author: Donald Davidson	Journal: Synthese	Number: 3	URL: https://www.jstor.org/stable/20114563	Volume: 17	Pages: 304-323	Year: 1967
Translator: Graham Sanders	Year: 2011	Author: Shen Fu	Publisher: Hackett Publishing	Book: Six Records of a Life Adrift			
Poem: The Mower's Song	Anthology: The Norton Anthology of English Literature	General Editor: M. H. Abrams	Year: 1979	Publisher: W. W. Norton	Author: Andrew Marvell	Edition: 4	Volume: 1	Page: 1368
Performances: Adam Driver and Carrie Fisher	Studios: Walt Disney Studios	Year: 2017	Film: *Star Wars: The Last Jedi*	Director: Rian Johnson			
URL: www.bostonglobe.com/news/world/2016/07/15/evacuation-progress-nice-	Date: 15 July	Article: Evacuation Order	Year: 2016	Newspaper: The Boston Globe			

airport/KO4BytWK4wFU OxjEkSpKTN/story.html.		Lifted at Nice Airport						

b. Define method and methodology. What is the difference between the two?

c. How is inductive approach in reasoning and research different from the deductive one? Give a few examples.

d. Why is plagiarism unethical? Can you think of exceptions to the unethicality of plagiarism? Explain your position.

Q. 8. Attempt any two of the following questions: (6x2=12 marks)

a.   Read the following passage and make notes not exceeding 10-15 items/points (including headings & subheadings).

So what is rhetoric? Rhetoric is, as simply defined as possible, the art of persuasion: the attempt by one human being to influence another in words. It is no more complicated than that. You are probably accustomed to thinking of rhetoric in terms of formal oratory: the sort of public speeches you see politicians make on television, CEOs make at AGMs and priests make on Sunday mornings in church. That is true, when it is at its most visible; that's when rhetoric puts on a dinner jacket and polishes its dancing shoes. But that is only one part of a huge area that the term covers. Rhetoric is a field of knowledge: that is, something susceptible to analysis and understanding in the same way poetry is. Just as people studying poetry talk about anapaests and caesuras and catalectic feet, people studying rhetoric have learned to recognise and name some of the ways in which rhetorical language behaves. But rhetoric is also, and primarily, a practical skill: what one of its earliest and most important theorists, Aristotle, described as a *tekhne*, which is the root of the words 'technical' and 'technique'. In calling it that, he intended to contrast it with philosophy. Philosophy constitutes a set of methods for arriving at a disinterested understanding of the eternal truths of the world. Rhetoric is directed at a practical

goal: it's a means to an end. Rhetoric is hustling, and our forefathers knew it. For fifteen centuries or so, the study of rhetoric was at the centre of Western education. To be able to recognise rhetorical techniques, and to have them at your command, was a central accomplishment of any educated man (they were men, then, mostly – sorry). It was right that it should be so. The business of state had at its heart, as it still has, two institutions: the law courts and the machinery of government, to both of which the practice of rhetoric was central.

b. What is the difference between pure research and applied research?
c. Why do you think is following a particular referencing and documentation style such as APA or MLA important? Explain.
d. Write a short note on "hypothesis" explaining the relevance of the same in literary research.

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations June 2022

Programme: PhD Biochemistry   **Session:** 2021-2022

Semester: 1   **Max. Time: 3 Hours**

Course Title: Research Methodology   **Max. Marks: 60**

Course Code: SIAS BC 02 01 01 C 4004

Instructions:

Answer any **FIVE** questions All questions carry **EQUAL (7.5 marks each) Marks.**

Q 1. What is the efficient way of searching and retrieving relevant data related to your research using electronic data base. Provide major tools used in this process. In your opinion which is the best tool and Justify your answer.

Q 2. What are the major differences in scientific writing amongst Term Paper, Research Project, Research report, Thesis, Research article and Review. What are the points to be considered while writing them? Provide suitable examples.

Q 3. What is a Research Design and what is the need for it? What are the good features and basic principles of good design. Mention different research designs available. Explain which is the best according to you. Justify

Q 4. What is a Research Problem? How will you select a research problem in biology and state the necessity of defining the problem? What are the techniques involved in defining a problem? Explain by providing an illustration.

Q 5. What are the essential sections while writing the thesis and original research publication. What are the major differences between them. In your opinion, can thesis be made as original research article or vice versa. Justify your answer.

Q 6. Define various bibliographic systems used in the research activities. Mention the importance of bibliography. Mention major tools used in checking plagiarism and state the importance of checking plagiarism.

Q 7. What is patent? Why should one apply for patent? Elaborate the procedure in applying for patent?

Q 8. What is IPR? State the importance of IPR? What are the rules and regulations governing the IPR in India.

Programme: Ph.D. (Statistics)   **Session: 2021-22**
Semester: Course work   **Max. Time: 3 Hours**
Course Title: Research Methodology   **Max. Marks: 60**
Course Code: SPMS STAT 02 01 01 C 6006

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 What do you understand by research? Describe types and significance of research.

Q:2 Describe the followings:

(a) Research Proposals
(b) Criteria of good research
(c) Monographs

Q:3 What do you understand by research modeling? Explain. Describe types of models and stages in research design.

Q:4 What do you mean by data collection? Write a short note on methods used in data collection and

analysis.

Q:5 Write short notes on the basic principle for the design of experiments

(a) Randomization
(b) Replication
(c) Local control

Q:6 Define the Type-I and Type-II errors. Derive the statistical analysis of a RBD. Obtain their merits

and demerits.

Q:7 Write a short note on structure and component of a research paper? Explain. What are concepts of

references and bibliography.

Q:8 Describe the followings with examples:

(a) Library resources
(b) Citation index
(c) How to prepare a document in Latex?

QUESTION PAPER PATTERN
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, JUNE 2022

Programme: Ph.D. (Physics)   Session: 2021-22
Semester: Course work   Max. Time: 3 Hours
Course Title: Research Methodology   Max. Marks: 60
Course Code: SPMS PHY 02 101 CC 6006

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 What do you understand by research? Describe types and significance of research.

Q:2 Describe the followings:

(a) Research Proposals
(b) Criteria of good research
(c) Monographs

Q:3 What do you understand by research modeling? Explain. Describe types of models and stages in research design.

Q:4 What do you mean by data collection? Write a short note on methods used in data collection and analysis.

Q:5 Write short notes on the basic principle for the design of experiments

(a) Randomization
(b) Replication
(c) Local control

Q:6 Define the Type-I and Type-II errors. Derive the statistical analysis of a RBD. Obtain their merits and demerits.

Q:7 Write a short note on structure and component of a research paper? Explain. What are concepts of references and bibliography.

Q:8 Describe the followings with examples:

(a) Library resources
(b) Citation index
(c) How to prepare a document in Latex?

Programme: Ph. D Biotechnology
Semester: First
Course Title: Biosafety & IPRs
Course Code: SIAS BT 2 1 02 C 3003

Session: 2021-22
Max. Time: 3 Hours
Max. Marks: 60

Instruction: *Attempt any five questions out of the following. Each question carries equal marks.*

Q.1. What do you mean by 'Biosafety'. Is Biosecurity is same as Biosafety ?. What is AMP model of Biorisk management (12 marks)

Q.2. what do you mean by Bioterrorism. Categories of various risk groups with examples. (12 marks)

Q.3. what are the various containments for biohazards. Write in details. (12 marks)

Q.4. What do you mean by Genetically Modified Organisms (GMO). What are the various hazards associated with GMOs? (12 marks)

Q.5. Describe salient features of Indian Patent Law? How is patent law different from US patent law? What are the three essential criteria for patentability? (12 marks)

Q.6. Can a researcher obtain a patent on tribal plant based medicine? How does Indian patent law deal with it? Who will be the owner of such a patent? Describe with one case study from India in terms of ownership and beneficiary. (12 marks)

Q.7. why ethics is important in biological research? What do you mean by 'Declaration of Helsinki'? (12 marks)

Q.8. what are the major ethics committees at the institute/University level? What are their major roles? (12 marks)

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations, June- 2022</u>

Programme: Pre-Ph.D. (Law)
Semester: N/A
Course Title: Legal Research and Methods
Course Code: SLM Law 02 101 C 3216

Session: 2021-22
Max. Time: 3 Hours
Max. Marks: 60

Instructions:
1. **Attempt any Five Questions out of the total eight questions.**
2. **All questions carry equal marks.**

Q.No. 1 What are various kinds of Legal Research? Also discuss about the importance of Research Methodology.

(12 Marks)

Q.No. 2 What are various types of Hypothesis? How a Hypothesis is formulated?

(12 Marks)

Q.No. 3 What do you mean by Research Design? Discuss about the ethical and legal issues in research.

(12 Marks)

Q.No. 4 What do you understand by Doctrinal and Empirical Research? Distinguish between the two.

(12 Marks)

Q.No. 5 What are the steps involved in writing of Research proposal. Discuss in detail.

(12 Marks)

Q.No. 6 What do you mean by collection of Data? Also discuss about the collection of Primary and Secondary Data.

(12 Marks)

Q.No. 7 Write a detailed note on Data Collection and Analysis.

(12 Marks)

Q.No. 8 Discuss about the evolution and development of Legal Research in India. Also discuss about the problems and challenges faced by Legal Research in India.

(12 Marks)

CENTRAL UNIVERSITY OF HARYANA

<u>Term End Examinations, June 2022</u>

Programme: PhD   Session: 2021-22

Semester: Course work   Max. Time: 3 Hours

Course Title: Research Methodology   Max. Marks: 60

Course Code: SOET-020101C4206

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

1. Define and explain the term "Research". Explain its importance and objectives. Briefly describe the different steps involved in a research process.

2. Explain the meaning and significance of research design. What is ethics in research? Why it is important? Explain five principles of research ethics.

3. What are the various means of conducting literature survey in modern times? Discuss the importance of critical literature review and its uses in planning innovation research.

4. Define spreadsheet tool and its salient features in detail. Write any five advantages using electronic spreadsheet in place of manual spreadsheet. What is Wrap Text feature of Excel, Merging of Cells and what will be the cell address of merged cells?

5. Elaborate on common errors committed by researchers in selecting the research problem. Give a detailed account on various approaches adopted by researchers in solving problems stated by them.

6. What is plagiarism. Differentiate it from self-plagiarism. Name any two tools used to check it? State the basic principles behind these tools.

7. Explain essential features of report writing highlighting the importance and implication of research outcomes.

8. **Briefly explain the following:**
   a. Scopus Indexed Journals
   b. Science Citation Index
   c. Journal Impact Factor
   d. h-Index

CENTRAL UNIVERSITY OF HARYANA

Even Semester Term End Examinations June 2022

Programme	: Ph.D. Physical Education and Sports	**Session**	: 2021-22
Semester	: I	**Max. Time**	: 3 Hours
Course Title	: Research Methodology in Physical Education	**Max. Marks**	: 60
Course Code	: SOE PHE 02 01 01 C4004		

Instructions:

1. Question no. 1 has eight parts and students are required to answer any five. Each part carries twelve Marks.

Q 1.   (5X12=60)

a) Elaborate on any six sources for collecting the review of related literature.

संबंधित साहित्य की समीक्षा एकत्र करने के लिए किन्हीं छह स्रोतों का विस्तार से वर्णन करें।

b) Identification of the research problems and explaining the criteria in selecting the research problem.

अनुसंधान समस्याओं की पहचान करना और अनुसंधान समस्या के चयन में मानदंड की व्याख्या करना।

c) Write short notes on experimental research, comparative research, historical research, meta-analyses, case study and survey study.

प्रायोगिक अनुसंधान, तुलनात्मक अनुसंधान, ऐतिहासिक शोध, मेटा-विश्लेषण, केस स्टडी और सर्वेक्षण अध्ययन पर संक्षिप्त नोट्स लिखें।

d) Explain the experimental design and its types.

प्रयोगात्मक डिजाइन और इसके प्रकारों की व्याख्या करें।

e) What is meant by sampling and explain the classification of sampling techniques?

नमूना से क्या अभिप्राय है और नमूना तकनीकों के वर्गीकरण की व्याख्या कीजिए?

f) What is data? Types of data and enumerate the different methods of data collection sources and explain their merits and demerits.

डेटा क्या है? डेटा के प्रकार और डेटा संग्रह स्रोतों के विभिन्न तरीकों की गणना करें और उनके गुण और दोषों की व्याख्या करें।

g) Explain the mechanism of writing a research article.

शोध लेख लिखने की क्रियाविधि की व्याख्या कीजिए।

h) Elaborate on the different formats for reference and bibliography.

संदर्भ और ग्रंथ सूची के लिए विभिन्न प्रारूपों पर विस्तार से बताएं।

Programme: Ph.D. in Physical Education   **Session:** 2021-22

Semester : Course work   **Max. Time:** 3 Hours

Course Title: Scientific Principles of Sports Training   **Max. Marks:** 60

Course Code: SOE PHE 02 01 03 E3024

Instruction: Attempt any five questions out of the following. Each question carries 12 equal marks.

Q:1 Explain the causes, symptoms and tackling of overload?

अतिभार के कारणों, लक्षणों और निवारण के बारे में बताएं?

Q:2 What are the principles of load, adaptation of load and the judgment of load?

भार के सिद्धांत, भार का अनुकूलन और भार का निर्णय क्या हैं?

Q:3 Explain the types of Strength and the methods to improve Strength?

शक्ति के प्रकार और शक्ति को बेहतर बनाने के तरीके बताएं?

Q:4 Illustrate the types of flexibility and the methods to improve flexibility?

लचीलेपन के प्रकार और लचीलेपन में सुधार के तरीकों का वर्णन करें?

Q:5 Explain the following training methods in details.

निम्नलिखित प्रशिक्षण विधियों को विस्तार से समझाइए।

     a) Fartlek Training *फार्टलेक प्रशिक्षण*

     b) Repetition training *दोहराव प्रशिक्षण*

Q:6 Illustrate the importance and methods of tactical training?

सामरिक प्रशिक्षण के महत्व और विधियों का वर्णन करें?

Q:7 What do you understand by periodization and also explain its types?

अवधिकरण से आप क्या समझते हैं और इसके प्रकारों की व्याख्या करें?

Q:8 Explain in detail the factors influencing sports performance?

खेल प्रदर्शन को प्रभावित करने वाले कारकों का विस्तार से वर्णन करें?

Program me:Ph.D. Physical Education   Session: 2021-22
Semester: Course works   Max. Time: 3Hr
Course Title: PSYCHO-SOCIO BASIS OF PHYSICAL
            EDUCATION   Max. Marks: 60

Course Code: SOE PHE 02 01 04 E3024

Instruction: Attempt any **five** questions out of fallowing. Each question carries equal marks.

Q:1 Explain Sports Psychology and the relationship of sport psychology with other sport sciences ? (12 Marks)

खेल मनोविज्ञान क्या है और खेल मनोविज्ञान का अन्य खेल विज्ञानों से संबंध की व्याख्या कीजिए ?

Q:2 Explain Psychological Profiling of sportsmen or Athletes and how it is helpful? (12 Marks)

खिलाड़ियों या एथलीटों की मनोवैज्ञानिक रूपरेखा की व्याख्या करें और यह कैसे सहायक है?

Q:3 Explain personality traits and which types of personality traits is for sportsperson and explain different theories of personality? (12Marks)

व्यक्तित्व लक्षणों की व्याख्या करें और खिलाड़ी के लिए किस प्रकार के व्यक्तित्व लक्षण हैं और व्यक्तित्व के विभिन्न सिद्धांतों की व्याख्या करें?

Q:4 What is Anxiety? Explain the Types of anxiety, Theories and Effect of anxiety on performance? (12 Marks)

एंग्जायटी क्या है? एंग्जायटी के प्रकार, सिद्धांत और प्रदर्शन पर एंग्जायटी के प्रभाव की व्याख्या करें?

Q:5 Explain inter-relation of sports and sociology and how social evils play their role in society? (12 Marks)

खेल और समाजशास्त्र के अंतर्संबंधों की व्याख्या करें और सामाजिक बुराइयाँ समाज में अपनी भूमिका कैसे निभाती हैं?

Q:6 What is the relationship of sports with social institutions and how it affects society? (12 Marks)

खेल का सामाजिक संस्थाओं से क्या संबंध है और यह समाज को कैसे प्रभावित करता है?

Q:7 What is Psychological Skill Training? Explain the implementation of PST and common problems in implementing PST? (12 Marks)

मनोवैज्ञानिक कौशल प्रशिक्षण क्या है? पीएसटी के कार्यान्वयन और पीएसटी को लागू करने में आम समस्याओं की व्याख्या करें?

Q:8 Write shorts note on- (3x4=12 marks)

(a) Intervention Technique
(b) Attention
(c) Autogenic Training
(d) Guided Imagery.

शॉर्ट्स नोट लिखें-
(ए) हस्तक्षेप तकनीक
(बी) ध्यान
(सी) ऑटोजेनिक प्रशिक्षण
(डी) निर्देशित इमेजरी।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, Jun 2022

Programme : Ph.D. Microbiology

Semester : Ist

Course Title : Advanced Analytical Techniques

Course Code : SIAL MB 02 01 02 C

Session: **2021-22**

*Max. Time: **3 Hours***

*Max.Marks : **60***

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

Question No. 1. Differentiate between following (any two):

    a) PAGE and SDS-PAGE

    b) Chemostat and turbidostat

    c) Proteomics and genomics

Question No. 2. Discuss any one advanced microscopy technique in detail along with its applications.

Question No. 3. Write short notes (Any two):

    a) Synchronous culture

    b) Continuous culture

    c) fed-batch culture

Question No. 4. Write notes on (Any two)

    a) Real-time PCR and its applications.

    b) Principle and technique of Gel electrophoresis.

    a) Restriction enzymes used in molecular biology techniques

Question No. 5. Discuss any one DNA sequencing method of your choice in detail.

Question No. 6. Discuss size-exclusion chromatography in detail giving suitable example.

Question No. 7. Discuss principles and applications of Mass spectrometry in proteomics.

Question No. 8. Discuss various types of feeds and also elaborate their different physical forms used for laboratory experiments.

Programme: Ph.D. Microbiology
Semester: I
Course Title: Advanced Analytical Techniques
Course Code:

Question No. 1.

Question No. 2.

Question No. 3.

Question No. 4.

Question No. 5.

Question No. 6.

Question No. 7.

Programme: **Ph.D. Biochemistry**   Session: **2021-22**
Semester: **1**   Max. Time: **3 Hours**
Course Title: **Advanced Analytical Techniques**   Max. Marks: **60**
Course Code: **SIAL 02 01 02 C 4004**

Instructions: **Attempt any five questions. Each question carries equal 12 marks.**

Q 1. What is Beer-Lambert's law? Enlist the factors that deviate the Beer-Lambert's law. Describe the principle and major components of UV-Visible Spectrophotometry.

Q 2. A protein is least stable (inactive) below its pI, what kind of exchanger you will select to purify the active form of such protein. Describe the stepwise method for its purification.

Q 3. What do you understand by Next-generation sequencing (NGS)? Write two NSG techniques with their advantages and disadvantages.

Q **4.** What is Plasmid? How does Plasmid act as a vector? Write about the plasmid isolation and its transformation methods.

Q 5. What does it mean by Restriction in restriction endonuclease? White about the different classes of Restriction endonuclease and how do use them in cloning?

Q 6. Explain the working model of confocal microscopy.

Q 7. What is FACS? Explain the major components of a Flow cytometer and sorting with their function.

Q 8. Explain Transmission electron microscopy in detail.

Q 1. What is Data-based Chart? First one below and sketch the Plant-i-cellent line. Describe the principle and major components of PLC-based floating instrument.

Q 2. A project is been awhile (function) before 30 yr, what kind of technique you will adapt to justify its cost, draw its aspect. Describe the separate method for its performance.

Q 3. What do you understand by Data-generation sequencing (DGS)? Write out DGS technique with their advantages and disadvantages.

Q 4. What is Plasma? How these Plasma are an a-resume? Write about the plasma sections and its transformation methods.

Q 5. What does it mean by Restriction in transition endoscope? Write about the different classes of Restriction endoscope and how these they to change?

Q 6. Explain the working model of confocal microscopy.

Q 7. With [a] OCR? Explain the major components of a Flow spectra and along with their function.

Q 8. Explain Transmission electron microscope in detail.

Programme: Ph.D. (Pharmaceutical Sciences)   **Session: 2021-22**

Semester: 1ˢᵗ (Pre-PhD Course Work)   **Max. Time: 3 Hours**

Course Title: Advanced Pharmaceutical Research   **Max. Marks: 60**

Course Code: SIAS PS 01 01 02 C 4004

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

1. Discuss the Principle and applications of Mass Spectroscopy and Sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE).   (12)

2. Write a detailed note on RNAi. Describe the significance of Pharmacogenomics.   (12)

3. Describe the Principle and test procedure of Acute eye irritation study as per OECD Guidelines. (12)

4. Describe the Principle and test procedure of skin sensitization study as per OECD Guidelines. (12)

5. Enlist various types of Biosafety cabinets. Discuss the principles of cell viability assays. (12)

6. Write the applications of *Confocal* and *Atomic Force Microscopy*. Discuss the principle and applications of *Flow cytometry technique*.   (12)

7. Describe the role of *Endoplasmic Reticulum Stress* in Disease Pathogenesis.   (12)

8. Give a detailed note on PARP enzyme. How is NF-κB signaling involved in inflammation? (12)

Programme: Ph.D (Pharmaceutical Sciences)   Session: 2021-22

Semester: II (Ph.D Course Work)   Max. Time: 3 Hours

Course Title: Advanced Pharmaceutical Research   Max. Marks: 60

Course Code: SLS-Ph-PR 01 01 02 C 0404

Instructions: Attempt any five questions. All questions carry equal marks.

1. Discuss the theory and application of Mass Spectroscopy and Sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE). (12)

2. Write a detailed note on HPLC. Discuss the significance of Pharmacovigilance. (12)

3. Describe the principle and test procedure of Ames gene mutation study, as per OECD Guidelines. (12)

4. Describe the Principle and test procedure of Skin sensitization study, as per OECD Guidelines. (12)

5. Define various types of toxicity studies. Discuss the principles of self shelf life studies. (12)

6. Write the application of Cisplatin and alkoxy Fe-ra Microscopy. Discuss the principle and application of Flow cytometry technique. (12)

7. Describe the role of P-glycoprotein/Reduction Stress in Disease Pathogenesis. (12)

8. Give a detailed note on P-SIP enzyme. How is MAP-k signaling involved in inflammation? (12)

CENTRAL UNIVERSITY OF HARYANA

Programme: PhD Nutrition Biology   **Session: 2021-22**

Semester: 1ˢᵗ   **Max. Time: 3 Hours**

Course Title: Advanced Analytical Techniques   **Max. Marks: 60**

 Course Code: SIAL NB 02 01 02 C 4004

Instruction: *Attempt any five questions out of the following. Each question carries equal marks.*

Q. 1 What is PCR ? Discuss the reaction set up of PCR along with its application (12 Marks)

Q.2 What is PAGE? Discuss about 2D Polyacrylamide gel electrophoresis (12 Marks)

Q. 3 What do you mean by chromatography? Write a detailed note on affinity chromatography (12 Marks)

Q.4 Write-down detailed note on restriction and modification enzymes used in cloning (12 Marks)

Q. 5 What is microbial growth? Discuss the microbial growth curve (12 Marks)

Q. 6 What is biosafety? Differentiate among BSL 1, 2, 3, and 4 (12 Marks)

Q. 7 How will you formulate feed for an experimental animal? (12 Marks)

Q.8 Write short note on any two of the following: (2x6= 12 Marks)

a) Proteomics

b) Primers

c) Continuous culture

Instruction: Attempt any four questions. Any one of the following. First question
compulsory in each question.

Q. 1 What is PCR? Enumerate reaction set up of PCR along with its applications. [12 Marks]

Q. 2 What is FSH? Discuss about 2D Polyacrylamide gel electrophoresis. [12 Marks]

Q. 3 What do you mean by chromatography? Write a detailed note on affinity chromatography. [12
Marks]

Q.4 Write short notes on technique and use of Electron microscope used in imaging. [12 Marks]

Q. 5 What is microbial growth? Discuss the microbial growth curve. [12 Marks]

Q. 6 What is Osmosis? Differentiate among DNA 1, 2, 3, and 4. [12 Marks]

Q. 7 How will you formulate feed for an experimental animal? [12 Marks]

Q.8 Write short notes on any two of the following (2x6= 12 Marks)

a) Proteomics

b) Biosafety

c) Continuous culture

Programme: **Ph.D. in Education**   Session: **2021-22**
Semester: **First** (Course work)   Time: **3 Hours**
Course Title: **Introduction to Educational** Research   Max. Marks: **60**
Course Code: **SOE030101C4004**

Instruction: *Attempt any five questions out of the following. Each question carries equal marks.*

Q1. What do you mean by 'Scientific method'? Discuss its uses in the field of education with suitable examples   **(4+8=12 marks)**

Q2. What do you mean by 'Educational Research'? Discuss its types with suitable examples

(4+8=12 marks)

Q3. How do you identify and conceptualize the research problem? Explain with suitable examples.

(12 marks)

Q4. What do you mean by 'Research Proposal'? Describe its steps with a suitable example.

(4+8=12 marks)

Q5. Critically evaluate the importance of quantitative research in the field of education. **(12 marks)**

Q6. What do you mean by 'Experiment Research'? Discuss the true experimental designs with suitable examples.   **(4+8=12 marks)**

Q7. What do you mean by 'Qualitative Research'? Describe the 'Phenomenological approach' with suitable examples.   **(4+8=12 marks)**

Q8. Write short notes on any *two* of the following topics: **(6x2=12 marks)**

   a) Types of Hypotheses
   b) Survey Studies
   c) Significance of Historical Research
   d) Importance of Mixed Research in the modern era

QUESTION PAPER PATTERN
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, JUNE 2022

Programme: Ph.D. (Mathematics)   Session: 2021-22
Semester: Course work   Max. Time: 3 Hours
Course Title: Research Methodology   Max. Marks: 60
Course Code: SBS MAT 02 01 01 C 6006

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 What do you understand by research? Describe types and significance of research.

Q:2 Describe the followings:

(a) Research Proposals
(b) Criteria of good research
(c) Monographs

Q:3 What do you understand by research modeling? Explain. Describe types of models and stages in research design.

Q:4 What do you mean by data collection? Write a short note on methods used in data collection and analysis.

Q:5 Write short notes on the basic principle for the design of experiments

(a) Randomization
(b) Replication
(c) Local control

Q:6 Define the Type-I and Type-II errors. Derive the statistical analysis of a RBD. Obtain their merits and demerits.

Q:7 Write a short note on structure and component of a research paper? Explain. What are concepts of references and bibliography.

Q:8 Describe the followings with examples:

(a) Library resources
(b) Citation index
(c) How to prepare a document in Latex?

Programme:	Ph.D. Course Work	**Session:**	2021-22
Semester:	1st	**Max. Time:**	3 Hours
Course Title:	ICT for Research	**Max. Marks:**	60
Course Code:	SIASLIS102C4004		

Instructions: There are eight questions and students need to answer any five. Each question carries twelve marks.

Q:1. Explain with examples databases of electronic thesis apart from Shodhganga and discuss the results related to the LIS theses in brief.   (12 marks)

Q:2. Explain steps involved in creating a Blog based on developing your own blog.   (12 marks)

Q:3. How Digital Libraries/IRs were helpful in conducting research in covid-19? Discuss about the role of any such DL/IR.   (12 marks)

Q:4. What are open access journals? Describe three studies undertaken on open access LIS journals published during last 3 years.   (12 marks)

Q:5. What are MOOCS? Make a case of MOOC available in SWAYAM relating to RPE/Plagiarism.   (12 marks)

Q:6. Comment upon the significance of Research Data Management and discuss about two important journals available in this area.   (12 marks)

Q:7. How Google Scholar can be used by the researchers? Discuss the various area in which Google Scholar can be useful for researchers.   (12 marks)

Q:8. Discuss the uses of ZOTERO or Mendeley in reference management.   (12 marks)

Programme: PhD   Session: 2021-22
Semester: Course work   Max. Time: 3 Hours
Course Title: Urban Geography   Max. Marks: 60
Course Code: SBS GEO 02 01 02 E 3104

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 Write short notes on any two of the following topics:

  (i)   Census Classification of Urban Places

  (ii)   Spatial Limits of Urban Areas

Q:2 Discuss the sources of data and issues in comparability

Q:3 Discuss the Post-Independence Characteristics of urbanization and growth of metropolitan cities in India.

Q:4 What is urban planning? Discuss the silent features of urban planning in India.

Q 5 Write short notes on any two of the following topics:

  (i)   Smart Cities

  (ii)   Satellite Town

Q6 Write short notes on any two of the following topics:

  (iii)   AMRUT

  (iv)   JNNURM

Q:7 Critically examine the urban models of internal structure in the current context.

Q:8 Explain the role of geospatial technology in urban planning and management?

QUESTION PAPER

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, June 2022

Programme: Ph.D. Course work   Session: 2022-23
Semester: I   Max. Time: 3 Hours
Course Title: **Fundamentals and Elements of Yoga**
Course Code: SIAS YOGA 2102 C 2103   Max. Marks: 60

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 Write the two definitions of Yoga from Shrimadbhagavadgita? Write about Bhakti Yoga?

Q:2 Name the ten Asana of the Gherand Samhita? Describe the Panch Dharna in detail.

Q:3 Write the five Vritties? How abhyasa & vairagya are useful to control them?

Q:4 Write the concept of Kriya Yoga? Describe the Kinds of Samadhi?

Q:5 Dharammed Samadhi is the result of which practice? Describe Antarang Yoga.

Q:6 Name the Guru of Swami Ram. What is the contribution of prominent modern Yogis to the development of Yoga?

Q:7 Who is the Guru of Swami Satyananda Sarswati ji? Write down the contribution of the Kaivalyadhama to Yoga research.

Q:8 Write down the Principles of Yoga. Yoga practices are adjuvant to medical treatment, prove with suitable examples.

CENTRAL UNIVERSITY OF HARYANA

<u>Term End Examinations, June 2022</u>

Programme:	M.Phil/PhD Political Science	**Session: 2021-22**
Semester:	Course Work	**Max. Time: 3 Hours**
Course Title:	Theory and Methods of Research in Social Sciences	**Max. Marks: 70**
Course Code:	SSHPOS02 (201) C6006	

Instructions:

1. Question no. 1 has seven sub parts and students need to answer any four. Each sub part carries three and half Marks.

2. Question no. 2 to 5 have three sub parts and students need to answer any two sub parts of each question. Each sub part carries seven marks.

Question No. 1. Explain briefly any four of the following terms: (4X3.5=14)
   a) Constructivism

   b) Quantitative research

   c) Paradigm

   d) Realism

   e) Epistemology

   f) Grounded Theory

   g) Research Problem

Question No. 2.   (2X7=14)

   a) What is cycle of research? Discuss in the light of inductive-deductive complementarity.

   b) What is Literature Review? What is its purpose and significance?

   c) What is the meaning of a paradigm? Explain the phenomena of 'paradigm shift' with examples.

Question No. 3.   (2X7=14)

   a) Explain the meaning and significance of mixed methods research?

   b) What is the difference between basic and applied research? Give examples.

   c) What are the characteristics of scientific research?

Question No. 4.   (2X7=14)

   a) Explain briefly the following qualitative research methodologies: participant observation, fieldwork, ethnography, unstructured interviews, life histories, textual analysis, and discourse analysis.

   b) Elaborate the three levels of research: Exploratory, Descriptive and Explanatory Research

   c) Differentiate between (a) radical structuralism and functionalism (b) Radical humanism and interpretivism

Question No. 5.   (2X7=14)

    a) Explain the meaning of Independent, Dependent, Mediating and Moderating variables? How each one of them is used in research design.

    b) Differentiate between Hypothesis-Generating Research and Hypothesis-Testing Research. Give examples.

    c) Explain the notion of validity in social science research. Differentiate between Internal and external validity.

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations June 2022

Programme: Ph.D (Nutrition Biology)   Session: 2021-22

Semester: First   Max. Time: 3 Hours

Course Title: Research Methodology   Max. Marks: 60

 Course Code: SIAS NB 02 01 01 C 4004

Note: Attempt any **five** questions out of the following. Each question carries equal marks.

Q 1.   Define a patent? What are various databases to search patent on a particular subject.
    (12)

Q2. Define research problem. What are various methods to search literature on nutritional
    biomarkers? Explain in detail.   **(12)**

Q3. What are GMOs ? How will you handle genetically modified organisms?   **(12)**

Q4.   Enlist various statistical tools for analysis and interpretation of data. Explain any two
    in detail.   **(12)**

Q 5.   Write a brief account on institutional human and animal ethics committee.   **(12)**

Q 6.   Explain the following   **(12)**

   a) Steps involved in writing a research paper.

   b) Write a brief account on Intellectual Property Rights.

Q7.   Enlist various formal experimental designs. Explain Completely Randomized Design.
(12)

Q8. How will you organize a research document in different sections? Explain.   **(12)**

CENTRAL UNIVERSITY OF HARYANA

Even Semester Term End Examinations June 2022

Programme: Ph.D   Session: **2021-22**

Semester: Course Work   Max. Time: **3 Hours**

Course Title: Advance Research Methodology   Max. Marks: **60**

Course Code: SAHS PSY 02 01 01 C 4004

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

1. Define Psychological research and differentiate between Univariate and Multivariate research by taking an appropriate example .

2. Define Research design and differentiate between group design and within group design by taking a suitable example.

3. Define application and assumptions of ANOVA and describe calculation process of two way ANOVA by taking an hypothetical example.

4. Define Multivariate analysis and describe factor analysis and its various method of factor extraction In detail.

5. Write a detailed note.

   a) Cluster Analysis

   b) Multiple Regression

6. Discuss the utility of qualitative methods in psychology and how it is good over quantitative methods.

7. Write a detailed note.

   c) Narratives

   d) Grounded theory

8. A Researcher verified the hypothesis that high anxiety is detrimental to the processing of the complex task. Two groups of the subjects, high and low on anxiety, were given a perceptual task to process uni-, bi-, and tri-dimensional stimuli. A total of 18 subjects were taken, 9 high anxiety and 9 low anxiety. Each of the 18 subjects was observed under each of the three consecutive days.

   a. Apply the suitable statistical test to the given data

   b. Explain the results by taking the consideration of the researcher's hypothesis

	B1	B2	B3
A1	4,7,8,9,6,4,9,11,5, 13	8,7,8,9,10,4,9,11,5, 17	8,9,11,7,14,5,8,10,8,6
A2	11,9,12,8,14,11,8,10,8,7	10,9,11,8,7,11,6,13,8,12	8,7,8,9,10,4,11,8,10,8

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations June 2022</u>

Programme: Ph.D　　　　　　　　　　　　**Session: 2021-22**
Semester:　I　　　　　　　　　　　　　　**Max. Time: 3 Hours**
Course Title: Research Methodology　　　**Max. Marks: 60**
Course Code: : SIAS MB 02 01 01 C

Instructions: Attempt any five questions out of the following. All questions carry equal marks

Q 1. Write brief notes on :

　a) Plagiarism.
　b) Databases for literature collection
　c) Biological replications

Q 2. What criteria you will follow while selecting a research problem. Discuss the importance of each factor

Q3. Discuss the significance and application of statistics in interpretation of successful outcome of any research

Q4. Describe the role of different regulatory agencies in conducting biological research

Q5. Discuss the various safety measures you will undertake while working with hazardous biomaterials

Q6. Describe different levels of biosafety containments with examples in each case

Q7. Describe different components of a thesis. Discuss the significance of bibliography. Which software tools are used to compile the bibliographic details?

Q8. Differentiate between (i) structured abstract vs unstructured abstract, (ii) Research project vs Thesis

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations May/June, 2022

Programme: Ph.D. Course Work   **Session: 2021-22**

Semester: Ist   **Max. Time: 3 Hours**

Course Title: Methodological Perspectives and Techniques of Social Research   Max. Marks: 70

Course Code: SAHS SC 02 201 CC 4105/ SAHS SC 03 301 CC 4105

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1. (Write a short note on any four)   (4X3.5=14)
  a) Society
  b) Subjectivity
  c) Ethnography
  d) Social survey
  e) Research methodology
  f) Social change
  g) Observation

Q 2.   (2X7=14)
  a) What do you mean by science? Is scientific study of society possible? Examine.
  b) Critically examine the nature of Sociology.
  c) What is a social fact? How we can identify social facts in a society? Explain.

Q3.   (2X7=14)
  a) What is positivism? What is the role of positivism in sociology?
  b) How feminist research is different from traditional research? Explain.
  c) Discuss the idea of Garfinkel about Ethnomethodology.

Q 4.   (2X7=14)
  a) What is the importance of social research in sociology? Elaborate.
  b) What do you mean by research design? What are the various types of research design?
  c) What is social research? Elaborate various steps in social research.

Q 5.   (2X7=14)
  a) What do you mean by qualitative research? How qualitative research is different from quantitative research? Which type of research is superior and more useful in sociology? Explain.
  b) Discuss the importance of statistical tools in social science research.
  c) What do mean by questionnaire? How questionnaire is useful in social research? Explain.

QUESTION PAPER
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, June 2022

Programme: Ph.D. Course work   **Session: 2022-23**

Semester: I   **Max. Time: 3 Hours**

Course Title: Research Methodology, Quantitative methods and Computer Applications for Yoga

Course Code: SIAS YOGA 2101 C 3104   **Max. Marks: 60**

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 Write the significance of research and how research is helpful in Yoga education?

Q:2 What is a literature review? What are the primary and secondary sources of reviews in the field of Yoga?

Q:3 What is research design? Write a proper design for your proposed research.

Q:4 What do you know about scientific search engines? Which part of a research paper is very informative for a researcher?

Q:5 What is the Journal impact factor? Write the difference between research journals and magazines related to Yoga?

Q:6 What is the sample size and what factors affect sample size? Why it is necessary to calculate it.

Q:7 What do you know about the Citation index? Write the methods to increase it?

Q:8 What is an abstract in research papers? What are the basic skills to write a research proposal for funding?

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, May 2022

Programme: Ph. D Biotechnology
Semester: First
Course Title: Research Methodology
Course Code: SIAS BT 2 1 01 C 4105

Session: 2021-22
Max. Time: 3 Hours
Max. Marks: 60

Instruction: *Attempt any five questions out of the following. Each question carries equal marks.*

Q:1. What do you mean by databases? Explain in detail about types and functions of Biological Databases. (12 marks)

Q.2. What are sequence similarity search methods ?. Write two similarity search algorithms along with their principles and types (if any). (12 marks)

Q.3. Calculate the mean median and mode of the following data. (12 marks)

scores	frequency
65-69	1
60-64	3
55-59	4
50-54	7
45-49	9
40-44	11
35-39	8
30-34	4
25-29	2
20-24	1

Q:4. Explain, when and where is the need for the computation of mean, median and mode for a given data?

Q:5. Compute the standard deviation of the following data. What information does it give about the data? (12 marks)

scores	frequency
127–129	1
124–128	2
121–123	3
118–120	1
115–117	6
112–114	4
109–111	3
106–108	2
103–105	1
100–102	1

Q:6. Write a note on the following- Measures of central tendency, measures of dispersion, measures of relationship. (12 marks)

Q:7. What is hypothesis testing? Explain the tests which are used for it. (12 marks)

Q:8. What is a research proposal? Write the various aspects of a technical research proposal. (12 marks)

Programme: Ph.D. (Sociology) Session: 2022-23
Semester: I Max. Time: 3 Hours
Course Title: Advanced Sociological Theories Max. Marks: 60
Course Code: SAHS SC 02 201 CC 4105

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Attempt any 5 (12X5=14)

1. Discuss the nature of sociological theory? What is the relationship between theory and research in Sociology?

   What is a social system? Locate the Parsonian theory of social action.

   OR

2. Discuss R. Merton Functional analysis. Why did he suggest middle range theory over grand theory?

3. What is phenomenology? Discuss Schutz and Husserl's Phenomenology of the social world?

4. Discuss Critical theory, locating J. Habermass and T. Adorno's 'public sphere' and 'enlightenment projects. What is its relevancy in the present context?

5. What is Neo-Marxism? What are L. Althusser's ideology apparatuses?

6. What is A. Giddens 'reflexivity'? In what way this is important in social research?

   OR

7. What is knowledge and power according to M Foucault? Discuss one of his works to locate his formation of knowledge.

8. Critically examine J. Derrida's Deconstruction theory.

   OR

How Bourdieu's work on 'Theory of Practice' applies to social research?

Programme:	PhD	**Session:**	2021-22
Semester:	Course Work	**Max. Time:**	3 Hours
Course Title:	Research Methodology for Management	**Max. Marks:**	60
Course Code:	SLM MGT 03 101 C 6006		

SET-I

Instruction: *Attempt any five questions out of the following. Each question carries equal marks.*

Q: 1. Do you agree that information helps in redefining the research? Discuss your view point by citing examples to support your argument. In continuation with your argument, also discuss the essence of word *systematic* which is generally used while defining the research.

(12 marks)

Q. 2. Discuss the role of qualitative research in carrying out quantitative research. Also make a comparative analysis between these two methods, based on at least five dimensions. Cite suitable examples to support your argument. (12 marks)

Q. 3. How a questionnaire differs from a schedule? Discuss the process of designing a good questionnaire with the help of a dummy questionnaire. Also discuss the reasons and techniques of pre-testing a questionnaire.

(12 marks)

Q: 4. What do you understand by errors in a research process? Discuss various types of sampling and non-sampling errors which are generally observed during a research process.

(12 marks)

Q: 5. In which situations would you recommend to use ANOVA? What happen if the assumptions of ANOVA are not met? Also comment when and why post-hoc tests and contrasts should be used in ANOVA?

(12 marks)

Q: 6. Is multicollinearity a serious problem in Regression Analysis? If yes, Why, If no, Why not? Suggest measures to address the issue of multicollinearity. Give reasons for your answer.

(12 marks)

Q: 7. Discuss the relevance of research report writing. What are its major components? Prepare a template for a research report which can be followed by any scholar while writing a report.

(12 marks)

Q: 8. Discuss the relevance of ethics in research. Give any two examples where an author may have to face issues related to ethics in research.

(12 marks)

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Programme: Ph.D. (Chemistry)　　　　　　　**Session:** 2021-22
Semester: Course Work　　　　　　　　　　　**Max. Time:** 3 Hours
Course Title: Research Methodology and　　**Max. Marks: 60**
　　　　　Computer Applications for Chemistry
Course Code: SBS CH 030101 C 5016

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1
(a) Discuss the philosophy of research. (4 marks)
(b) What are the limitations of scientific method of knowing? (4 marks)
(c) How can you reach to the objectives of the research? (4 marks)

Q:2
(a) Briefly discuss criteria for developing a good research question. (6 marks)
(b) What is the difference between experimental research and ex post facto research? (6 marks)

Q:3
(a) Explain the steps of research process with examples. (6 marks)
(b) Discuss the types of qualitative research design. (6 marks)

Q:4
　Define research, list the characteristics of true experimental designs and explain the various experimental designs with examples. (12 marks)

Q:5
(a) How has the internet influenced students' learning styles?
(b) Differentiate keywords, phrases & synonyms and find out the appropriate keywords, phrases & synonyms from the following sentence:
　"How might education in correctional facilities play a role in reducing recidivism?"

Q:6
(a) Explain the term Data Filter in Origin Lab. and how the data filter can be used to reduce worksheet data?
(b) What is the difference between line chart and XY scatter chart in MS excel.

Q:7
(a) Discuss in detail about representation of the research process. (6 marks)
(b) Discuss briefly about common errors while writing a chemistry pesearch paper. (6 marks)

Q:8
(a) What are the different components of a research proposal? Write the importance of technical and survey reports. (6 marks)
(b) Briefly describe plagiarism. How it can be avoided? Mention the name of two software/database with which plagiarism can be checked. (6 marks)

QUESTION PAPER
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, June 2022

Programme: Ph.D. Course work   Session: 2022-23
Semester: I   Max. Time: 3 Hours
Course Title: Research Methodology, Quantitative methods and Computer Applications for Yoga

Course Code: SIAS YOGA 2101 C 3104   Max. Marks: 60

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

Q:1 Write the significance of research and how research is helpful in Yoga education?

Q:2 What is a literature review? What are the primary and secondary sources of reviews in the field of Yoga?

Q:3 What is research design? Write a proper design for your proposed research.

Q:4 What do you know about scientific search engines? Which part of a research paper is very informative for a researcher?

Q:5 What is the Journal impact factor? Write the difference between research journals and magazines related to Yoga?

Q:6 What is the sample size and what factors affect sample size? Why it is necessary to calculate it.

Q:7 What do you know about the Citation index? Write the methods to increase it?

Q:8 What is an abstract in research papers? What are the basic skills to write a research proposal for funding?

Programme: Ph.D. and M.Phil.   **Session**   : 2021-22
Semester: Course work   **Course Title:** Teacher Education
Max. Time: 3 Hour
Course Code: SOE 03 01 02 E 4004   **Max. Marks: 60**

Instruction: Attempt any five questions out of the following. Each question carries equal marks.

1. Elaborate the meaning of teacher education? Discuss the objectives of secondary school teacher education .   (12 Marks)

2. What are the basic recommendations of New Education Policy 2020 for teacher education in India? How these recommendations will change in teacher education system in coming future?   (12 Marks)

3. Judge the role NCTE and NCERT in teacher education? Prove your points with suitable examples.   (6x 2=12 Marks)

4. Discuss the basic recommendations of RTE Act 2009 and Samagar ShikshaAbhiyan in teacher education.   (6x 2=12 Marks)

5. Quality is an important concern in education and teacher education. Keeping this in mind how quality of pre-service and in-service education of secondary school teachers can be improved? Write the answer in context of India.   (12 Marks)

6. Write a detailed note on: (6x 2=12 Marks)
    A) Give your views about the challenges in professional development of teachers in India? Suggest your views to combat with these challenges.

    B) After Covid-19 pandemic blended mode of learning is more important in teacher education. Prove it by your strong arguments.

7. Quality of teacher depends upon quality of teacher education. What are the challenges in quality teacher education? Suggest some ways to improve the quality of teacher education. (12 Marks)

8. Write a detailed note on: (4x 3=12 Marks)
   A) SWAYAM
   B) Online Education Resources,
   C)Learning Management System