

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: PhD
Course Title: Teacher Education
Course Code: SOE030102E4004

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q:1 Explain the needs & aims and objectives of Teacher Education at Secondary level 4+8= 12

अध्यापक शिक्षा के माध्यमिक स्तर के लक्ष्यों एवं उद्देश्यों की व्याख्या कीजिए।

Q:2 Analyze the main Provisions of School Education and Teacher Education of the Draft of National Education Policy (NEP)2020. 04+08 =12

राष्ट्रीय शिक्षा नीति 2020 के प्रारूप के अनुसार विद्यालयीन शिक्षा और अध्यापक शिक्षा के प्रमुख प्रावधानों का विश्लेषण करो।

Q:3 What are the main contributions or considerations of SARVA SHIKSHA ABHIYAN (SSA) and RASTRIYA MADHYAMIK SHIKSHA ABHIYAN (RMSA) in school Education? Discuss. 12

सर्व शिक्षा अभियान और राष्ट्रीय माध्यमिक शिक्षा अभियान के विद्यालयी शिक्षा के प्रमुख प्रावधानों की चर्चा कीजिये।

Q:4 Justify/prove of relevance of the role and functions of NATIONAL COUNCIL FOR TEACHER EDUCATION (NCTE) OR NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC) 12

राष्ट्रीय अध्यापक शिक्षा परिषद् (एन.सी.टी.ई) अथवा राष्ट्रीय प्रत्यायन परिषद् (एन.ए.ए.सी.)की भूमिका और कार्यों की न्यायसंगतता/सार्थकता सिद्ध कीजिए

Q:5 What do you know regarding the organization of pre-service teacher education programmes? Explain in detail. 12

पूर्व सेवारत अध्यापक शिक्षा के कार्यक्रमों को आयोजित करने के बारे में आप क्या जानते हैं इस बारे में विस्तार से व्याख्या कीजिए।

Q: 6 Enlist the issues and concerns in professional preparation and development of teachers, write the main consideration in brief. 04+08=12

अध्यापकों की व्यावसायिक तैयारी एवं विकास के मुद्दों एवं पहलुओं को सूचीबद्ध कीजिए इनमें प्रमुख की मुद्दों एवं पहलुओं को संक्षिप्त में लिखिए।

Q:7 What are the trends and Challenges of ICT integrated teacher Education in India ? Prove your answer with suitable examples . 12

अध्यापक शिक्षा में सूचना एवं संचार प्रौद्योगिकी के समन्वय की प्रवृत्तियों और चुनौतियों से आप का क्या आशय

है ? अपने उत्तर को उपयुक्त उदाहरणों द्वारा सिद्ध कीजिए।

Q:8. Describe in short any three digital initiatives government e-PG pathshala, Massive Open Online Course (MOOCs) through SWAYAM, Online Educational Resources (OER) and Learning Management System (LMS) 3X4=12

संस्कार द्वारा प्रारंभ किये गए किन्हीं तीन तरल/आभासी पहलों/कदमों का संक्षिप्त में वर्णन कीजिए यथा- इ पीजी पाठशाला, स्वयम द्वारा संचालित मैसिव ओपन ऑनलाइन कोर्सेज, ओपन एज्युकेशन रिसोर्सेज लर्निंग और लर्निंग मनेजमेंट सिस्टम।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: PhD

Semester: Course work

Course Title: Contemporary Issues in Management

Course Code: SLM MGT 03 102 C 6006

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1

- (a) Describe the role of Indian ethos and values in managing the operations of various modern corporate houses? [6 marks]
- (b) Describe the importance of Elton Mayo's human relations approach in managing the organization's effectiveness in the current environment? [6 marks]

Q:2

- (a) Describe the importance of work life balance in context to operations of modern organizations? [6 marks]
- (b) State your view on the role of emotional and social intelligence in managing the business operations in the current scenario? [6 marks]

Q:3

- (a) Describe the social and legal concepts in marketing in our country? [6 marks]
- (b) Define the role of Green marketing in creating sustainable future for our country? [6 marks]

Q:4

- (a) Explain how the usage of internet is helpful in promoting the brands at International level with suitable examples? [6 marks]
- (b) Comment on the role of new digital media towards globalization with suitable examples? [6 marks]

Q:5

- (a) Discuss the importance of digital payment system in promoting the business activities of our country? [6marks]
- (b) Define micro finance and venture capital and also explain their importance towards business houses? [6 marks]

Q:6

- (a) Define the term corporate social responsibility and explain how it is beneficial for the corporate houses with suitable examples? [6 marks]
- (b) Explain the various environmental issues that are required to be solved by the business organizations in order to run their operations smoothly? [6 marks]

Q:7

- (a) Define Inventory management and its types and briefly explain the role of inventory management in the smooth conduction of business activities of an organization? [6 marks]
- (b) Define Supply chain management and explain the various innovations occurred in the field of supply chain management? [6 marks]

Q:8.

- (a) Explain the role of SWOT analysis in framing business strategies for the efficient management of corporate houses with suitable example? [6 marks]
- (b) Define Social and Women Entrepreneurship? Also explain their role in boosting the Indian Economy with suitable examples? [6 marks]

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme: Ph.D. Course Work
Semester: First
Course Title: ICT for Research
Course Code: SIASLIS102C4004

Session: 2022-23
Max. Time: 3 Hours
Max. Marks: 60

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

Q:1. How institutional repositories are useful in researches. Make a case of any such institutional repository (12 marks)

Q:2. How would you showcase your researches using social media. Make at least two such posts for the social media (12 marks)

Q:3. How the concept of Open Science was useful bringing out research on covid-19? Discuss and mention in brief about DOAJ. (12 marks)

Q:4. What is UGC Care List? Describe the method to check listing of journals in this list and mention names of any three journals which are covered through UGC Care list. (12 marks)

Q:5. What are SWAYAM? Discuss and mention courses relating to research methodology on SWAYAM (12 marks)

Q:6. Comment upon the significance of Research Data Management and discuss about any such repository. (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 utility and process of using ZOTERO or Mendeley in reference management for ongoing researches. (12 marks)

CENTRAL UNIVERSITY OF HARYANA
End Semester Examinations March 2023
Programme: M.ED Session: 2022-23

Semester: First

Max. Time: 3 Hours

Course Title: Educational Management and Leadership

Maximum Marks :70

Course Code: SOE 01 01DCEC 3104

Instructions:

- (i) Candidates are required to attempt all the five questions.
- (ii) Question No.1 consists of six short answer type questions out of which the candidates are required to attempt any four questions. Each question carries 3.5 marks.
- (iii) Question No. 2 to 5 have options in which the Candidates are required to attempt any two question from each unit three, Each question carries 7 marks
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Q.1 Write any four questions from the following.

(निम्नलिखित में से किन्हीं चार को लिखिये।)

1-Nature of Educational Planning.

(शैक्षिक नियोजन की प्रकृति।)

2-Models of communication.

(संप्रेषण के प्रतिरूप)

3-Write in brief on any one -Blake and Mouton's Managerial Grid.

(इनमें से किसी की संक्षिप्त लिखिए -ब्लेक एंड मौटन का मनेजेरिअल ग्रिड.

.4-State Institute of Education(SIE) OR Institute of Studies in Education(IASE)

(राज्यशिक्षा संस्थान अथवा राज्य उच्च शिक्षा एवं अध्ययन संस्थान)

5-Differentiate the Managerial Creativity and Managerial Ethics

(प्रबंधकीय सृजनात्मकता एवं प्रबंधकीय नैतिकता के मध्य अंतर कीजिये।)

6-According to you, which leadership style is the most suitable ? Write in short

आप शैक्षिक नेतृत्व के किस तरीको सबसे उपयुक्त समझते हैं? संक्षिप्त में लिखिए।

4X 3.5=14

Unit-1

Q.2- (a) Write in detail the Needs and Scope of Educational Management.

(2x7)= 14

(शैक्षिक प्रबंध की आवश्यकता, क्षेत्र एवं उपागमों को विस्तार से लिखिए।)

(b) Write Scope of Educational Supervision.

शैक्षणिक पर्यवेक्षण के क्षेत्र को लिखिए।

(C). Elaborate the Meaning and nature of Educational Supervision.

(शैक्षणिक पर्यवेक्षण का अर्थ, प्रकृति और क्षेत्र को विस्तार पूर्वक लिखिए।)

Unit-2

3-(a) Analyze the Types and Devices of Communication.

(2x7)= 14

(संप्रेषण के प्रकार, विधियाँ और संप्रेषण के उपकरणों का विश्लेषण कीजिए।)

(b) Write different methods of communication.

संप्रेषण की विविध विधियों को लिखिए।

(C) Justify the Selection of Appropriate Communication Strategies addressing the Barriers of Communication.

अच्छे अथवा उपयुक्त संप्रेषण की व्यवस्थाओं/युक्तियों की न्यायसंगतता सिद्ध कीजिए और प्रेषण के मार्ग में आने वाले अवरोधों, बाधाओं या चुनौतियों का सामना कैसे करेंगे ?

Unit-3

4- (a) What do you know about Leadership in Education? Explain the any one theories of Leadership in short.

(2x7)= 14

शिक्षा में नेतृत्व से आपका क्या आशय है ? नेतृत्व के प्रमुख सिद्धांतों में से किसी एक की व्याख्या कीजिए।

(b) Write different Approaches of Leadership in detail.

नेतृत्व के उपागमों को विस्तार से लिखिए।

(C) Discuss Fiedler's Contingency Model.

फेडलर के कन्टीजैन्सी मॉडल की चर्चा कीजिए।

Unit-4

5- (a) What do you know about SCERT? Explain the role and function of the State Council of Educational Research & Training (SCERT).

(2x7)= 14

राज्य शैक्षणिक अनुसन्धान एवं प्रशिक्षण परिषद् (रा.शै.अ.प्र.प) के बारे में आप क्या जानते हैं? राज्य शैक्षणिक अनुसन्धान एवं प्रशिक्षण परिषद् (रा.शै.अ.प्र.प) की भूमिका व कार्यों की व्याख्या कीजिए।

(b) Write in detail the role and functions of District Institute of Education & Training (DIET)

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जिला शिक्षण एवं प्रशिक्षण संस्थान (डाइट) की भूमिका व कार्यों को विस्तार से लिखिए।

(C) Discuss role of IASE in the field of education.

आई.ए.एस.ई की शिक्षा में भूमिका की चर्चा कीजिए।

QUESTION PAPER
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme: Ph.D. Course work

Session: 2022-23

Semester: First

Max. Time: 3 Hours

Course Title: Fundamentals of Yoga Therapy

Course Code: SIAS YOGA 2101 E 2103

Max. Marks: 60

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

Q:1 What is Histology? Describe a human cell with picture.

Q:2 Write about connective tissues in detail.

Q:3 What is systematic circulation? Impact of Yogic practices on the respiratory system.

Q:4 What is lung capacity? Write the impact of Yoga on the muscular system.

Q:5 Which Yogic practices are helpful in the management of blood sugar?

Q:6 How many nerves emerge from the thoracic region? Explain the autonomic nervous system in detail.

Q:7 Write the chemical name of T3 hormone. Describe the role of the Adrenal glands in stress management.

Q:8 Basic principles of Yoga therapy. What regimen do you suggest for neck pain?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. Course Work
Course Title: Scientific Principles of Sports Training
Course Code: SOE PHE 020103 E3024

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q:1 Explain the meaning, aim and characteristics of Teaching, Training and Coaching?

टीचिंग, ट्रेनिंग और कोचिंग के अर्थ, उद्देश्य और विशेषताओं की व्याख्या करें?

Q:2 Explain the causes, symptoms and tackling of Overload?

ओवरलोड के कारण, लक्षण और इससे निपटने के उपाय बताएं?

Q:3 Explain the factors determining endurance and the methods of endurance training?

सहनशक्ति को निर्धारित करने वाले कारकों और सहनशक्ति प्रशिक्षण के तरीकों की व्याख्या करें?

Q:4 Explain the meaning, importance and types of flexibility?

लचीलेपन का अर्थ, महत्व और प्रकार बताएं?

Q:5 Explain the principles and importance of fartlek training?

फार्टलेक प्रशिक्षण के सिद्धांतों और महत्व की व्याख्या करें?

Q:6 What do you understand by Technical and Tactical Training and also explain the methods of technical training?

तकनीकी और सामरिक प्रशिक्षण से आप क्या समझते हैं और तकनीकी प्रशिक्षण की विधियों की व्याख्या भी करें?

Q:7 What are the principles of planning and also explain the types of training plan?

नियोजन के सिद्धांत क्या हैं और प्रशिक्षण योजना के प्रकारों की भी व्याख्या करें?

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

खेलों में प्रदर्शन को प्रभावित करने वाले कारकों की व्याख्या करें?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D.

Semester: Course work

Course Title: RESEARCH BASED KINESIOLOGY AND SPORTS BIOMECHANICS

Max. Time: 3 Hour

Course Code: SOE PHE 02 01 02 E3024

Max. Marks: 60

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

Q:1 Explain the need and importance of Kinesiology in Physical Education and Sports?

Q:2 What do you understand by planes and axis also explain their types and interrelationship?

Q:3 Explain the classification of force system?

Q:4 Explain the application and classes of lever in sports and physical activity?

Q:5 Explain the Biomechanical analysis of Walking?

Q:6 What are the basic steps of analysis of Sports Technique?

Q:7 Explain the Qualitative and Quantitative methods for technique analysis?

Q:8. What are the means and methods of investigation of technique?

CENTRAL UNIVERSITY OF HARYANA

Term End Examination, March 2023

Program me: Ph.D. Physical Education

Session: 2022-23

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 following. Each question carries equal marks.

Q:1 Explain the relationship of Sport Psychology with other sport sciences and how the psychological factors effect sports performance? (12 Marks)

अन्य खेल विज्ञानों के साथ खेल मनोविज्ञान के संबंध की व्याख्या करें और मनोवैज्ञानिक कारक खेल के प्रदर्शन को कैसे प्रभावित करते हैं

Q:2 Explain Goal Setting, Coping with Stress and Anxiety in sports and preparing athlete for major competition?(12 Marks)

लक्ष्य निर्धारण, खेलों में तनाव और चिंता से निपटने और प्रमुख प्रतियोगिता के लिए एथलीट तैयार करने की व्याख्या करें?

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)

एंजायटी क्या है? एंजायटी के प्रकार, सिद्धांत और प्रदर्शन पर एंजायटी 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 कीजिए और समझाइए कि किस प्रकार सामाजिक बुराईयां समाज में अपनी भूमिका निभाती हैं?

Q:6 Explain Society as a Web and Role of Physical Education in context of social problems? (12 Marks)

सामाजिक समस्याओं के संदर्भ में समाज को एक जाल के रूप में और शारीरिक शिक्षा की भूमिका की व्याख्या कीजिए?

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) VMBR
- (b) Attention
- (c) Autogenic Training
- (d) Deep Breathing.

शॉर्ट्स नोट लिखें-

- (ए) वीएमबीआर
- (बी) ध्यान
- (सी) ऑटोजेनिक प्रशिक्षण
- (डी) गहरी श्वास ।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations March 2023

Programme: Ph.D.

Session: 2022-23

Semester: 1st

Max. Time: 3 Hours

Course Title: Energy Storage Systems for Electric Vehicles

Max. Marks: 60

Course Code: SOET EE020106E4004

Instructions:

1. Total no. of question eight, Attempt any Five.
2. Question no. 1 to 8 have three parts and students are required to answer any two parts of each question. Each part carries six marks.

Q 1. (2X6=12)

- a) What is meant by Electric Vehicles? Mention the advantages and disadvantages of electric vehicle?
- b) Compare conventional vehicle with hybrid electric vehicle?
- c) Discuss the environmental importance of EV and their social impacts?

Q2 (2X6=12)

- a) What AMP-hr and SOC in battery?
- b) What is meant by fuel cell? Describe its proper functioning with neat diagram?
- c) Discuss the functioning of Lithium-ion battery with neat diagram?

Q3 (2X6=12)

- a) Explain unidirectional and Bidirectional charging in Electric Vehicles?
- b) Explain in details about the regenerative braking in DC motor with proper equation?
- c) Discuss the issues of energy management strategies?

Q4 (2X6=12)

- a) Explain fuel cell and flywheel as energy source elements in electric and hybrid electric vehicle?
- b) Why a gear system is needed for an ICE? Explain with relevant characteristic curves?
- c) What is meant by Constant Power Speed Ratio as applied to an electric motor?

Q 5. (2X6=12)

- a) Explain general background of alternative energy sources and sustainability?
- b) Explain in brief about Plug-in-Hybrid Electric Vehicles?
- c) Discuss in details about the operating mode of series and parallel hybrid Electric Vehicles?

Q6. (2X6=12)

- a) Explain in brief about the Dynamic equation of Electric Vehicles?
- b) Discuss in details about the energy and power requirement for various HEVs?
- c) Discuss in details about the specification and requirements of batteries for Electric Vehicles?

Q 7.

(2X6=12)

- a) Discuss in details about the working principle of Supercapacitors with neat diagram?
- b) Explain in brief about the working principle of fuel cell and hydrogen storage?
- c) Differentiate between supercapacitors, fuel cell and hydrogen storage?

Q 8.

(2X6=12)

- a) Explain battery thermal management system?
- b) Discuss in detail about the tractive effort, transmission requirement and vehicle performance in Electric vehicles?
- c) Explain regulations and safety aspects of High voltage batteries?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. (Management Studies)

Course Title: Research Methodology for Management

Course Code: SLM MGT 03 101 C 6006

Semester: Course Work

Max. Time: 3 Hour

Max. Marks: 60

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

Q.1 Why is it important to define the research problem appropriately? Discuss some of the common errors encountered by researchers in defining the research problem. Suggest some measures to reduce the incidence of such errors. Explain your view point with the help of examples.

Q.2 The *Campus Food Service* would like to determine how many people eat in the student cafeteria. List and explain the survey methods by which this information could be obtained. Also give your valuation about the best method with proper justification.

Q.3 How stratified sampling procedure is related to cluster sampling procedure? Which one of these is the least expensive and least time-consuming? Explain the sampling errors which may be committed by the researchers while using these techniques.

Q.4 Discuss the relevance of hypothesis in a research process. Is it necessary to have hypothesis while conducting research in any of the functional areas of management? Why and why not? Develop a dummy hypothesis and explain the procedure of testing it.

Q.5 Discuss the relevance of rotation in factor analysis? Is it necessary to rotate factors? What problem is it solving? Which type of rotation would you recommend in which case and why? Explain your answer.

Q.6 What is relevance of contrasts and post-hoc tests in ANOVA? How are these tests used? How do you see ANOVA without contrasts and Post-hoc tests? What problem is it solving? Explain your answer.

Q.7 Discuss the important components of a research report with relevance of each component. What role does a report play in research? Explain your answer.

Q.8 Why ethics are considered important in research? How journals are ensuring the ethics? What are the key points to be kept in mind by researchers which publishing? What could be the consequences of not abiding by the ethics?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations March 2023

Programme: Doctor of Philosophy (Ph.D.)

Session: 2022-23

Semester: Coursework

Max. Time: 3 Hours

Course Title: Introduction to Educational Research

Max. Marks: 60

Course Code: SOE 03 01 C 4004

Instructions: Attempt any five (05) questions out of the following. Each question carries equal marks.

- Q 1: What are the common steps of scientific method? How are these be applied for research in social sciences? Explain.
- Q 2: Why is it important to review the literature before making a research proposal? Explain its role in various steps of research proposal.
- Q 3: What are various types of hypotheses? Discuss the steps of testing a statistical hypothesis with suitable examples.
- Q 4: If you are going to develop a research proposal, what are basic consideration you will follow before making the research proposal? Discuss.
- Q 5: What are the types of variables used in research? Explain various methods of controlling intervening variables, with suitable examples.
- Q 6: What do you mean by validity of research results? Discuss various types of validity of research results.
- Q 7: What are the important features of qualitative research? Compare major types of qualitative research.
- Q 8: What are various designs of mixed research? Discuss importance of triangulation of data interpretations in mixed research.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D.
Course Title: Research Methodology
Course Code: SOET 020101C 4206

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

- Q1: Define the concept of Research, and its types. Also explain the applications of research. [12]
- Q2: What are the features of good a research design? Discuss the process of defining a research problem and preparing research design analysis with example. [12]
- Q3: What is the significance of literature survey in a good research? Differentiate between primary and secondary source of literature survey. Also explain how it affects in problem formulation. [12]
- Q4: (a) Discuss the various steps involved in writing a good research paper. [6]
(b) What are the precautions to be taken while preparing the research dissertation? [6]
- Q5: What is a spreadsheet tool? Discuss the various functions and features for statistical data analysis.[12]
- Q6: What do you mean by the search engine? Why do we use search engine? Explain any one advance search tools offered by search engines. [12]
- Q7: What is a research proposal and why is it so important in research? What are essential ingredient of a good research proposal? [12]
- Q8: Write a technical note on:
- a) Thesis Writing / Dissertation [6]
b) Plagiarism [6]

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. (Commerce)
Course Title: Research Methodology
Course Code: SLM COM 02 01 01 C 5106

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q:1 “Research is an Organized and Systematic way of Finding answers to Questions.”-Discuss.

Q:2 What is a research problem? Define the main issues, which should receive the attention of the researcher in formulating the research problem. Give suitable examples to elucidate your points.

Q:3 a) Distinguish between the process of qualitative research and quantitative research?
b) Explain exploratory research design with example.

Q:4 a) What is bias, and how can it be reduced during interviews?
b) Why there is limited use of secondary data in business research? Explain with justification.

Q:5 Point out the importance of sampling in solving business problems. Also, compare and contrast the purposive and random sampling methods. Highlight the situation where each of these can be used.

Q:6 Describe the objectives of measurement in business research. What are various sources of error in measurements? Explain the four types of measurement scales with examples.

Q:7 a) Describe the meaning and application of factor analysis, and discriminant analysis.
b) Explain any two non-parametric tests for hypothesis testing with example.

Q:8. a) Explain the steps involved in research report writing.
b) Explain the referencing styles in business research with suitable examples.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme : Ph.D. in Physical Education

Semester : Course work

Max. Time: 3 Hour

Course Title : Research Methodology in Physical Education

Max. Marks: 60

Course Code : SOE PHE 02 01 01 C4004

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

Q:1 List down the various source of collecting a review of related literature.

संबंधित साहित्य की समीक्षा एकत्र करने के विभिन्न स्रोतों की सूची बनाएं।

Q:2 Explain the types of hypotheses and write down the type-1 and type-2 errors.

परिकल्पनाओं के प्रकारों की व्याख्या करें और टाइप-1 और टाइप-2 त्रुटियों को लिखें।

Q:3 Write down the classifications and methods of research? with suitable examples.

अनुसंधान के वर्गीकरण और विधियों को लिखें? उपयुक्त उदाहरणों के साथ।

Q:4 Elaborate the experimental designs in research.

अनुसंधान में प्रयोगात्मक डिजाइनों को विस्तृत करें।

Q:5 Explain the classification of probability and non-probability sampling.

प्रायिकता और गैर-संभाव्यता प्रतिचयन के वर्गीकरण की व्याख्या करें।

Q:6 Enumerate the different methods of data collection and explain its merits and demerits.

डेटा संग्रह के विभिन्न तरीकों की गणना करें और इसके गुणों और दोषों की व्याख्या करें।

Q:7 List down and differentiate the various reference format.

विभिन्न संदर्भ प्रारूपों की सूची बनाएं और उनमें अंतर करें।

Q:8 Prepare a research proposal according to your specialization.

अपनी विशेषज्ञता के अनुसार शोध प्रस्ताव तैयार करें।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. Chemistry

Course Title: Advanced Computational Chemistry

Course Code: SBS CH 030102 E 5016

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1

- How can you differentiate between computational and non-computational theoretical chemistry? (3 marks)
- Comment on suitable Hartree-Fock for the low spin of Mn^{2+} and Mn^{3+} ions? (3 marks)
- Describe scope and role of computational methods in frontier areas of research in chemistry. (3 marks)
- What are relativistic effects? (3 marks)

Q:2

- Discuss the following figure based on Born-Oppenheimer approximation. (4 marks)

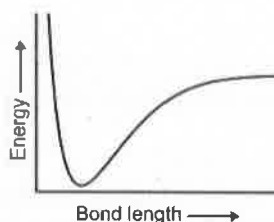


Figure: An example of a one-dimensional potential energy surface for a diatomic molecule.

- Schrödinger equation solves one-electron system then how do computational calculations resolve the multielectron systems? (4 marks)
- Briefly describe simplified algorithmic flowchart of the Hartree-Fock approximation. (4 marks)

Q:3 What are differences between Slater Type Orbitals and Gaussian Type Orbitals? What do you mean by STO-3G basis? Would you expect a triple-zeta basis set to give better results than STO-3G and why? (12 marks)

Q:4 Write short notes on a) Polarization functions, b) diffusion functions and c) atomic natural orbital basis sets. (12 marks)

Q:5 What do you mean by optimization techniques? Discuss conjugate gradient methods and Newton-Raphson methods. (12 marks)

Q:6

(a) What you mean by TST? Discuss by using schematic illustration of a reaction path. (6 marks)

(b) What do you mean by variational transition state theory? (6 marks)

Q:7

(a) How do you optimize MoS₂? (4 marks)

(b) Write a short note on Gaussian09 program. How to use a defined basis set in Gaussian09 software? (4 marks)

(c) What is the role of iterations during calculations? (4 marks)

Q:8

(a) How can you differentiate optimization energy from single point energy calculation? (3 marks)

(b) How to report a new theoretical molecule? (3 marks)

(c) Describe intrinsic reaction coordinate? (6 marks)

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme: Research Programme
Semester: Coursework
Course Title: Educational Research and Its Process
Course Code: Ph.D.– SOE 030102C4004

Session: 2022-23
Max. Time: 3 Hours
Max. Marks: 60

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

Q:1. Read the topic given below: (12 marks)

- Cognitive and metacognitive learning strategies, motivational beliefs and academic achievement of University professional students: A correlational study

Discuss the concept of population, types of sampling methods and size of the sample you would employ to conduct the above study. Justify the selection of the sampling method.

Q:2. Describe the steps followed in the construction of the questionnaire construction. List the methods adopted to check the reliability and validity of a questionnaire and explain any one method for each of reliability and validity. (12 marks)

Q:3. For what type of problem and under what circumstances would you find the following data-gathering techniques most appropriate? Describe with the help of suitable examples.

a. Likert scale b. Questionnaire c. Interview d. Observation

(12 marks)

Q:4. List all the methods of random sampling and non-random sampling. Explain any five sampling methods which are suitable to be employed in a qualitative study. (12 marks)

Q:5. Briefly explain the meaning of each of the following terms (12 marks)

- Rejection region and Nonrejection region
- Tails of a test
- Significance level
- Two types of errors

Q:6. A soft-drink manufacturer claims that its 12-ounce cans do not contain, on average, more than 30 calories. A random sample of 64 cans of this soft drink, which were checked for calories, contained a mean of 32 calories with a standard deviation of 3 calories. Does the sample information support the alternative hypothesis that the manufacturer's claim is false? Use a significance level of 5%. What will your conclusion be using this critical value/p-value and $\alpha = .05$? (12 marks)

Q:7. Answer the following:

a) Which Non-Parametric tests are alternatives to t-test and ANOVA? (2 marks)

b) Read the question below and identify which Chi-square test(Goodness-of-fit tests or Independence and homogeneity tests) corresponds to the given example. Differentiate between both types of chi-square tests. (10 marks)

Solve the question using the suitable chi-square test.

Of all students enrolled at a large undergraduate university, 19% are seniors, 23% are juniors, 27% are sophomores, and 31% are freshmen. A sample of 200 students taken from this university by the student senate to conduct a survey includes 50 seniors, 46 juniors, 55 sophomores, and 49 freshmen. Using a 2.5% significance level, test the null hypothesis that this sample is a random sample. (Hint: This sample will be a random sample if it includes approximately 19% seniors, 23% juniors, 27% sophomores, and 31% freshmen.)

Q:8. Write short notes on the following topics: (3x4=12 marks)

- a) Role of UGC, and NCERT in Research
- b) Academic and research content available as e-resources and databases
- c) Use of ICT tools in plagiarism detection and correction
- d) Use of ANCOVA with two covariates

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D (English)

Semester: Course work

Course Title: Contemporary Literary Thought and Critical Approaches

Course Code: SLLCH ENG 03 01 C 02 5106

Max. Marks: 60

Max. Time: 3 Hours

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

Q:1 Define and discuss 'Postcolonialism' with suitable references from major postcolonial theorists and texts.

Q:2 Discuss the origin and development of Diaspora theory and literature with special reference to Indian Diaspora literature.

Q:3 *A House for Mr. Biswas* portrays the essence of Diaspora sensibility. Discuss in detail with suitable textual references.

Q:4 What do you understand by Dalit Aesthetics? How is it different from mainstream aesthetics in India.

Q:5 Discuss Mamang Dai's *The Legends of Pensam* as a tribal text.

Q:6 Critically comment on the use of myth and memory in Mamang Dai's *The Legends of Pensam*.

Q:7 Explain *Rasa Siddhanta* as theory of literary experience. Discuss its types.

Q:8. Write a detailed note on *Dhvani Siddhanta*.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: EVS
Course work Ph.D.
Course Title: Advanced Analytical Techniques
Course Code: SIAS EVS 02 01 02 C 4004

Semester: I
Max. Time: 3 Hour
Max. Marks: 60

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

- Q:1 How will you define plasmid based on copy numbers? Write the important factors responsible for plasmid stability. How does a plasmid maintain its copy numbers in the host?
- Q:2 What do you understand by Next-generation sequencing (NGS)? Describe the sequence by synthesis method of NSG.
- Q:3 An enzyme needs to be purified in its native state. Describe in detail about the principle and detailed procedure of the best chromatographic technique of choice to accomplish the objective.
- Q:4 Describe the experimental procedure with details of the methodology to be used to identify the protein sequence of an unknown protein. How can its cellular localization be determined?
- Q:5 Discuss fed-batch fermentation process and compare it with continuous and batch fermentation processes.
- Q:6 Describe the principles and applications of Atomic Force microscopy or Flow cytometry.
- Q:7 Write in detail about the GC-MS/MS technique with a suitable diagram, components, applications, and demerits?
- Q:8. Write in detail about the X-Ray Diffraction technique with a suitable diagram, components, applications, and demerits?

QUESTION PAPER PATTERN
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme: PhD

Session: 2022-23

Semester: Course work

Max. Time: 3 Hours

Course Title: Advanced Spatial Techniques in Geography

Max. Marks: 60

Course Code: SBS GEO 02 01 02 C 3104

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

Q:1 What is dispersion? Explain the methods of measures of dispersion and their significance.

Q:2 What is sampling? Discuss the probability sampling in details.

Q:3 Discuss the followings: (i) correlation analysis (ii) regression analysis.

Q:4 What is Z-Score method? Explain the use and method of calculation in detail.

Q:5 Define followings: (i) spatial and non-spatial data (ii) thematic mapping

Q:7 Describe the supervised and unsupervised classification and their characteristics.

Q:8 What is drone mapping? Discuss the use of drone GIS in agriculture with a suitable example.

हरियाणा केंद्रीय विश्वविद्यालय, महेन्द्रगढ़

सत्रांत परीक्षा, मार्च 2023

कार्यक्रम : पीएच.डी. (हिंदी)

सत्र : 2022-23

सेमेस्टर : कोर्स वर्क

समयावधि : 3 घंटे

पाठ्यक्रम शीर्षक : शोध प्रविधि

अधिकतम अंक : 60

पाठ्यक्रम कोड : SLLCH HND 01 C 101

निर्देश : निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

1. शोध का अर्थ बताते हुए शोध और आलोचना में अंतर स्पष्ट कीजिए।
2. शोध के प्रमुख तत्त्वों पर संक्षेप में प्रकाश डालिए।
3. पाठालोचनात्मक शोध पर एक नोट लिखिए।
4. शोध की प्रमुख पद्धतियाँ कौन-कौन सी हैं? संक्षेप में बताइए।
5. शोध में विषय संकल्पना की भूमिका पर विचार कीजिए।
6. संदर्भ ग्रंथ सूची के निर्माण की प्रविधि समझाइए।
7. शोध की वस्तुनिष्ठता एवं शोधकर्ता की आत्मपरकता को स्पष्ट कीजिए।
8. हिंदी में शोध की प्रमुख समस्याओं को रेखांकित कीजिए।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: History and Archaeology

Course Title: Archaeology

Course Code: SAHS HA 03 0102 ARCH E60

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1 What are the Archaeological studies and describe its scope?

Q:2 What is the difference between vertical and horizontal excavations? Elucidate with examples.

Q:3 Bring out the importance of Epigraphy as a source of History.

Q:4 Write a note on meaning, scope and limitations of Epigraphy.

Q:5 Discuss the role of Numismatics in the reconstruction of Indian History.

Q:6 Discuss the antiquity of coinage in India.

Q:7 Discuss the main features of clay and stone art.

Q:8 Write a note on types of monuments and architectural remains.

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March / April 2023

Programme: Journalism and Mass Communication

Semester: Course work

Course Title: Applications of Statistics and Computer in Research

Max. Time: 3 Hour

Course Code: SHSS DJMC 020103 C3104

Max. Marks: 60

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

Q:1 What do you mean by Central Tendency? When should Mean, Median and Mode be calculated in Media Research?

Q:2 What is t-distribution? How will you Test the Significance of Mean of samples?

Q:3 Write an extensive note on the package of Microsoft Office. Define its Apps and their Utilization.

Q:4 How can we use computers for Quantitative and Qualitative Analysis of Data? Explain.

Q:5 Write comprehensively about the Basics, Functions and Scope of Internet for Research?

Q:6 What is SPSS and how does it benefits Survey Data Analysis?

Q:7 What are the Applications and Scope of Computers in Social Science Research?

Q:8. 'Now a day, one can not only do the Research on Social Media but can also use Social Media as the Tool of Research', Comment on it.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Microbiology

Semester: I

Course work Ph.D.

Course Title: Advanced Analytical Techniques

Max. Time: 3 Hour

Course Code: SIAS MB 02 01 02 C4004

Max. Marks: 60

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

Q:1 How will you define plasmid based on copy numbers? Write the important factors responsible for plasmid stability. How does a plasmid maintain its copy numbers in the host?

Q:2 What do you understand by Next-generation sequencing (NGS)? Describe the sequence by synthesis method of NSG.

Q:3 An enzyme needs to be purified in its native state. Describe in detail about the principle and detailed procedure of the best chromatographic technique of choice to accomplish the objective.

Q:4 Describe the experimental procedure with details of the methodology to be used to identify the protein sequence of an unknown protein. How can its cellular localization be determined?

Q:5 Discuss fed-batch fermentation process and compare it with continuous and batch fermentation processes.

Q:6 Describe the principles and applications of Atomic Force microscopy or Flow cytometry.

Q:7 Write in detail about the GC-MS/MS technique with a suitable diagram, components, applications, and demerits?

Q:8. Write in detail about the X-Ray Diffraction technique with a suitable diagram, components, applications, and demerits?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: PhD Nutrition Biology

Session: 2022-23

Semester: First

Max. Time: 3 Hours

Course Title: Advanced Analytical Techniques

Max. Marks: 60

Course Code: SIAS NB 02 01 02 C 4004

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

Q.1 What do you mean by DNA sequencing? Explain any method of DNA sequencing in detail. (12 Marks)

Q.2 What is PCR? Also write down the principle, types and applications of PCR. (12 Marks)

Q.3 What is chromatography? Briefly discuss various methods of chromatography. (12 Marks)

Q.4 What is electrophoresis? Write down detailed note on 1D polyacrylamide gel electrophoresis. (12 Marks)

Q.5 Explain in detail about microbial growth and kinetics. (12 Marks)

Q.6 What is biosafety? Discuss about the types of biosafety cabinets used in research laboratory. (12 Marks)

Q.7 Explain about the handling, maintenance and feed formulation for an experimental animal. (12 Marks)

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

A. Enzymes generally used in cloning

B. Immunochemical detection of proteins

C. Isolation and purification of proteins

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. (Pharmaceutical Sciences)

Semester: Course work

Course Title: Advanced Pharmaceutical Research (APR)

Max. Time: 3 Hour

Course Code: SIAS PS 01 01 02 C 4004

Max. Marks: 60

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

Q:1 (a) Write a note on principle and applications of Sodium dodecyl sulphate–polyacrylamide gel electrophoresis (SDS-PAGE).

(b) Discuss the principles and applications of Mass spectrometry.

Q:2 (a) Define RNA-interference. Differentiate SiRNA and miRNA.

(b) Write a note on “Promise and the Hope of Gene Therapy”.

Q:3 (a) Write down the principle of acute inhalational toxicity study. How Magnusson and Kligman grading scale is involved in challenge patch test reactions?

(b) Describe Acute Oral Toxicity - Fixed Dose Procedure briefly.

Q:4 (a) Give a brief overview about Guinea Pig Maximisation Test Method.

(b) Write a note on Acute eye irritation study as per OECD guideline.

Q:5 (a) Discuss various cryopreservation techniques.

(b) Discuss principles and applications of any two cell viability assays.

Q:6 (a) Discuss the general procedure employed in cell culture.

(b) Enlist basic equipments used in cell culture lab alongwith their application.

Q:7 (a) Discuss the significance of cyclic AMP as secondary messenger.

(b) Write the role of Nitric oxide signaling in health and disease.

Q:8 (a) Give a detailed note on Nrf2-ARE signaling pathway.

(b) Explain the mechanism of adaptive unfolded protein response (UPR).

CENTRAL UNIVERSITY OF HARYANA

Term End Examination, March 2023

Programme: PhD (Physics)

Course Title: Experimental Methods

Course Code: SBS PHY 02 102 DCEC 5016

Semester: Course Work

Max. Time: 3 hrs

Max. Marks: 60

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

Q:1. (a) Discuss the effect of low pressure on the various physical parameters such as molecular density, mean free path and time to form monolayer. (6)

(b) Explain the working and construction of a gauge used to measure rough vacuum. (6)

Q:2. (a) Explain the principle and working of diffusion vacuum pump. What is the role of liquid nitrogen trap in diffusion pump? (8)

(b) How would you measure a leak in any vacuum system? (4)

Q:3. (a) Derive an expression for critical radius required for homogenous nucleation with free energy curve. (8)

(b) Explain the principle of thermal evaporation techniques and its limitations. (4)

Q:4 Explain the principle and working of RF sputtering and magnetron sputtering. (12)

Q:5 Using Bragg's law and its geometrical interpretation, explain the principle and experimental set up of X-ray diffractometer. Differentiate between powder x-ray diffraction and glancing angle x-ray diffraction. (12)

Q:6. Discuss the concept of Auger electrons and Auger spectroscopy. How is it different than X-ray photoelectron spectroscopy? (10)

(b) How would you calculate crystallite size using X-ray diffraction pattern? (2)

Q:7. Why do we require electron microscopes over optical microscopes? Explain the working principle, construction and applications of transmission electron microscope (TEM). (12)

Q:8. Write brief notes on (i) Atomic Force Microscopy (ii) Photoluminescence (12)

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D.

Semester: Course work

**Course Title: POLITICAL SCIENCE: TEXT, BOUNDARIES
AND CRITICAL CHALLENGES**

Max. Time: 3 Hour

Course Code: SSH POS 02 (102) C6006/SSH POS 03 (102) C6006

Max. Marks: 60

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

Q:1 What are the key elements of Political Philosophy? How Political Philosophy can contribute to the study of important Contemporary Issues?

Q:2 Define Democratic Nationalism. Explain the limits of Democratic Nationalism in the era of Globalisation?

Q:3 What is the dissent and protest? Is it important for the growth for democracies?

Q:4 Define Public Policy? Describe policy analysis in the context of liberal and welfare theories of state.

Q:5 How do the Political executive and Bureaucracy influence the Legislature in India? Explain it with the latest examples.

Q:6 Describe the Instruments of Political Mobilisation in India.

Q:7 Discuss the Historical approach of comparative politics in detail.

Q:8. How does the system of separation of power works in India?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. Course Work

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 Five Questions

(12X5=60)

- Q.1** What do you mean by the 'Sociological Theory'? Explore the nature of sociological theory.
- Q.2** What is 'Social Research'? Discuss the relationship between theory and research?
- Q.3** Explore the theory of 'binary opposites' given by the Levi Strauss.
- Q.4** What do you mean by the 'Middle Rang Theory'? How middle range theories are different from grand theories? Explain.
- Q.5** Critically examine the J. Derrida's theory on Deconstruction.
- Q.6** What is phenomenology? How phenomenological approach is useful in social research? Discuss.
- Q.7** What is 'Modernity'? Discuss important features of modernity as suggested by Anthony Giddens.
- Q.8** What do you mean by 'Power'? How Knowledge affecting to power in contemporary era? Explain.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D.
Course Title: Order Statistics
Course Code: SPMS STAT 02 01 03 E 6006

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q:1 Let the random sample X_1, X_2, \dots, X_n of size n drawn from exponential parent with probability density function

$$f(x) = \frac{1}{\theta} \exp(-x/\theta), \quad x \geq 0, \theta > 0.$$

Q:2 For an arbitrary distribution with finite k th moment

$$(n-r)\mu_{r:n}^{(k)} + r\mu_{r+1:n}^{(k)} = n\mu_{r:n-1}^{(k)},$$

where $r = 1, 2, \dots, n-1$, and $k = 1, 2, \dots$

Q:3 Let $v = X_{(n)}^{(1)}, X_{(n)}^{(2)}, \dots, X_{(n)}^{(k)}$, be the product of k maxima independent random sample of size n drawn from a uniform $U(0,1)$ population. Show that the pdf of v is given by

$$f(v) = \frac{n^k}{\Gamma(k)} v^{n-1} (-\log v)^{k-1}; \quad 0 \leq v \leq 1.$$

Q:4 Let $X_{(n_1)}$ and $Y_{(n_2)}$ be the maxima in independent random sample of size n_1 and n_2 ($N = n_1 + n_2$) variates from a uniform $U(0,1)$ parent. Prove that the pdf of $v = \frac{X_{(n_1)}}{Y_{(n_2)}}$ is

$$f(v) = \begin{cases} n_1 n_2 v^{n_1-1}; & 0 \leq v \leq 1 \\ \frac{n_1 n_2 v^{-n_2-1}}{N}; & 1 \leq v \leq \infty \end{cases}$$

Q:5 Show that cdf of the mid-range in a random sample of a continuous parent with cdf $F(x)$ is

$$F(M) = n \int_{-\infty}^M [F(2m-x) - F(x)]^{n-1} f(x) dx.$$

Q:6 Find the distribution of the order statistics of range when $f(x)$ is uniform.

Q:7 Let X_1, X_2, \dots, X_n be independent variates, and let X_i have pdf $f(x_i)$ and cumulative distribution function (cdf) $F(x_i)$ prove that the pdf of $X_{(n:n)}$ is

$$f_{n:n}(x) = \left[\prod_{i=1}^n F(x_i) \right] \sum_{i=1}^n \left(\frac{f_i(x)}{F(x_i)} \right).$$

Q:8. Suppose X_1, X_2, \dots, X_n are identically and independently distributed $U(0, 1)$ random variables. Let $T_n = n[1 - X_{(n-1)}]$, where $X_{r:n}$ denotes the r th order statistics. Show that T_n converges in distribution and identify the limiting distribution either by its cumulative distribution function (cdf) or pdf.

CENTRAL UNIVERSITY OF HARYANA
Term End Examination March 2023

Programme : Ph.D. Statistics
Course Title : Reliability and Life Testing
Course Code : SBS ST 02 01 04 E 6006

Semester: Course Work
Max. Time: 3 Hours
Max Marks: 60

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

- Q:1** a. Discuss various reliability characteristics of a system. Establish various relationships among them.
b. Explain the truncation and censoring in detail. Describe with examples the type I and type II censoring schemes.
- Q:2** a. Derive the maximum likelihood estimator of $R(t)$ and $h(t)$ in case of Type I censored sample drawn from $Exp(\theta)$.
b. Let $x_{(1)}, x_{(2)}, \dots, x_{(r)}$ ($r < n$) be a type II censored sample from $Exp(\theta)$. Define $z_i = (n - i + 1)(x_{(i)} - x_{(i-1)})$, $i = 1, 2, \dots, r$ and $x_{(0)} = 0$, then prove that
- (i) $\sum_{i=1}^r z_i = S_r = \sum_{i=1}^r x_{(i)} + (n - r)x_{(r)}$.
(ii) Z_i 's are iid $Exp(\theta)$.
(iii) $\sum_{i=1}^r Z_i \sim Gamma(\theta, r)$.
- Q:3** Derive maximum likelihood estimators of the parameters of gamma distribution under Type II censoring.
- Q:4** Obtain maximum likelihood estimators of the parameters of the Weibull distribution under Type I censoring and explain obtained results.
- Q:5** a. Develop $(1 - \alpha) \times 100$ confidence interval for $R(t)$ with Type II censored data from exponential distribution with mean θ .
b. Derive UMVUE of $R(t)$ in case a complete sample is drawn exponential distribution with mean θ .
- Q:6** Let $x_{(1)}, x_{(2)}, \dots, x_{(r)}$ ($r < n$) be a failure censored sample from $Exp(\mu, 4)$. Test the hypothesis $H_0 : R(t) = p_0$ against $H_1 : R(t) = p_1$ ($p_1 > p_0$). Also, draw the power curve.

Q:7 a. Define the prior and posterior distributions of a parameter. What role does Fisher's information play in the choice of a prior distribution? Also, define Jeffrey's priors and conjugate priors.

b. Discuss the basis of Bayesian reliability analysis. Explain the proper and improper priors with examples.

Q:8 Let x_1, x_2, \dots, x_n be a random sample from gamma distribution $Gamma(\theta, 2)$. Let the prior distribution of θ be inverted gamma distribution $IGamma(a, b)$. Under squared error loss function obtain the Bayes estimates of θ , $R(t)$ and $h(t)$.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Tourism & Hotel Management

Course Title: Interdisciplinary Approaches in Tourism & Hotel Management

Course Code: SBMS THM 03 01 03.C 6006

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1 What are the factors influencing the growth of tourism? Can we promote tourism movement without affecting the environment? Explain.

Q:2 Interaction between guest and Host creates win-win situations' comment on the statement with suitable case study and also explain different typology of Tourism.

Q:3 "One of the principles of sustainable tourism development is to improve the quality of life of the host community", Justify this statement"

Q:4 Suggests the measures to empower the local community through sustainable tourism.

Q:5 You have promoted a new destination. Suggest appropriate ways to promote that destination the market.

Q:6 Briefly discuss the factors that marketers should consider while determining the promotion mix for their offerings, giving suitable examples.

Q:7 Discuss the concept of "Responsible", "Alternative" and "community based tourism" with suitable examples

Q:8. Enumerate major advantages of having a National Tourism Plan. Identify essential elements which a good and sound national tourism plan should address

QUESTION PAPER

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. Course work

Session: 2022-23

Semester: First

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 difference between modern and ancient Yoga text books.

Q:2 Name the first and second Asana from Gherand Samhita? Describe the Nadanushandhan in detail.

Q:3 Explain about Yog Antraya?

Q:4 Write the concept of Pranayama and their effect according to Maharishi Patanjali.

Q:5 Name the Yoga which propagated by Shri Aurobindo with their life sketch .

Q:6 Discuss the need of Srimadbhagavadgita in Education.

Q:7 Write about the impact of Yogic management on mental ability.

Q:8 'Mind as a key player in an individual' write your view.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Biochemistry
Course work Ph.D.
Course Title: Advanced Analytical Techniques
Course Code: SIAS BC 02 01 02 C 4004

Semester: I

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1 How will you define plasmid based on copy numbers? Write the important factors responsible for plasmid stability. How does a plasmid maintain its copy numbers in the host?

Q:2 What do you understand by Next-generation sequencing (NGS)? Describe the sequence by synthesis method of NSG.

Q:3 An enzyme needs to be purified in its native state. Describe in detail about the principle and detailed procedure of the best chromatographic technique of choice to accomplish the objective.

Q:4 Describe the experimental procedure with details of the methodology to be used to identify the protein sequence of an unknown protein. How can its cellular localization be determined?

Q:5 Discuss fed-batch fermentation process and compare it with continuous and batch fermentation processes.

Q:6 Describe the principles and applications of Atomic Force microscopy or Flow cytometry.

Q:7 Write in detail about the GC-MS/MS technique with a suitable diagram, components, applications, and demerits?

Q:8. Write in detail about the X-Ray Diffraction technique with a suitable diagram, components, applications, and demerits?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph. D Course Work

Semester: Course work

Course Title: Contemporary Issue in Commerce and Business

Course Code: SLM COM 02 01 02 5106

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1 What do you mean by Foreign Direct Investment? Describe its Role in Economic Growth of India

Q:2 Write a Short Note on Goods and Service Tax in India.

Q:3 Explain the Corporate Financial Reporting Disclosure.

Q:4 Explain the E- Marketing & Consumer Behaviour.

Q:5 Describe the IFRS Implementation and Challenges in India.

Q:6 What do you understand by Organizational Behaviour? Explain Workforce Diversity.

Q:7 Write a Note on CSR and Business Ethics.

Q:8. Explain the Corporate Governance and Role of Independent Directors.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D.

Semester: Course work

Course Title: Advanced Data Structures and Algorithms

Max. Time: 3 Hour

Course Code: SOET CS 020103E 4004

Max. Marks: 60

Instruction: Attempt any five questions out of the following. Each question carries equal marks (12 X 5 = 60).

- Q1: Discuss the need and importance of good data structure. Discuss a strategy to choose an appropriate data structure. [12]
- Q2: 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 [12]
- Q3: Define the Competitive Analysis (online algorithms). Write an algorithm for merge sort. [12]
- Q4: a) Explain Prim's algorithm to find minimum cost spanning tree. [6]
b) Write the Dijkstra's shortest path algorithm. [6]
- Q5: Write short notes on the following topics:
a) Suffix Arrays [6]
b) Knuth-Morris-Pratt Algorithm for string matching. [6]
- Q6: What is Knapsack problem? Find an optimal solution for the fractional knapsack problem $l = \langle 1, 12, 13, 14, 15 \rangle$, $w = \langle 5, 10, 20, 30, 40 \rangle$, $v = \langle 30, 20, 100, 90, 160 \rangle$. The capacity of knapsack $W = 60$ [12]
- Q7: Write the Recursive Quick Sort algorithm. Take an example and apply Recursive Quick Sort Algorithm to sort it. Also write quick sort algorithm's complexity for Best, Average, and Worst case. [12]
- Q8: Write short notes on the following topics:
a) k-server problem [6]
b) Online Paging Problem [6]

CENTRAL UNIVERSITY OF HARYANA

Jant-Pali, Mahendergarh, Haryana

Name of Programme	:	Ph.D Economics
Year & Semester	:	2019
Course Name	:	Advances in Economic Theory and Policy
Course Code	:	SAHS ECO 03 102 C 06
Duration	:	3 Hours
Maximum Marks	:	60

Note: Attempt any five questions, each question carries equal marks.

1. What is chaos theory? Explain the various applications of it in field of economics. (12 marks)
2. What is production function? Explain the various types of production function. (12 marks)
3. Write a note on following- (6+6 marks)
 - a) Asymmetrical information
 - b) Moral hazards
4. Critically examine the synthesis of Keynesian model as reviewed by Baumol and Tobin. (6+6 marks)
5. Critically explain the H-O theory of international trade. (12 marks)
6. What is dependency theory? Critically explain this theory in context of under developed countries. (12 marks)
7. Briefly explain the following-(8+4 marks)
 - a) Goods and Service tax
 - b) Financial Inclusion
8. Write a note on following- (6+6 marks)
 - a) Inflation targeting and monetary policy in India
 - b) Issues and challenges of FDI in retail sector

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: PhD (Journalism and Mass Communication)
Course Title: Research Methodologies in Communication
Course Code: SHSSDJMC020102C3104

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q: 1 Write a critical note on current trends in communication research with examples.

Q: 2 Discuss in detail importance of literature review in a research study and write a detail note on different types of reviews.

Q: 3 How do qualitative and quantitative researcher use theory in research? Discuss with examples.

Q: 4 Write a detail note on survey method of research and discuss its advantages and disadvantages?

Q: 5 Write a detail note on Focus Group Discussion its advantages and disadvantages.

Q: 6 What should a researcher keep in mind while preparing a research proposal?

Q: 7 Discuss in detail importance of ethnographic research method in qualitative research with examples.

Q: 8. What are the advantages of open ended versus close ended questions in research.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. Course work DTHM

Semester: Course work

Course Title: RESEARCH METHODOLOGY INTOURISM & HOTEL MANAGEMENT

Max. Time: 3 Hour

Course Code: SBMS THM 03 01 02 C 6006

Max. Marks: 60 (Credit 6)

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

Q:1 Discuss various types of research with examples and importance of its understanding for tourism researchers.

Q:2 What do you understand by research design used in Tourism & Hospitality? Explain the concept of classification of research designs.

Q:3 Define sampling. Write a detailed essay on different methods of sampling?

Q:4 Explain survey methods of data collection suitable for tourism and hotel industry.

Q:5 Discuss any two techniques of multivariate analysis used by researchers with suitable examples.

Q:6 What do you understand by measures of central tendency and dispersion?

Q:7 Explain "review of literature" section in thesis and discuss its importance.

Q:8. Discuss different methods used for presentation of statistics in our field?

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme: Ph.D. Sanskrit
Course Title: हस्तलेखशास्त्रम्
Course Code: SHSS SKT 01 C 4015

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q:1 मातृकायाः स्वरूपं प्रकाराश्च विवेच्यताम् ।

Q:2 लिपिः इत्यनेन कः अभिप्रायः ? पाण्डुलिपि-अन्वेषणे प्रमुखभारतीयः वैदेशिकविदुषां च योगदानविषये लिखत।

Q:3 मातृका संरक्षणेन कः अभिप्रायः ? कथं करणीयम् इति विस्तरेण विवेच्यताम् ।

Q:4 सांस्कृतिकधरोहररूपेण पाण्डुलिपिनां महत्ताविषये विस्तरेण लिखत ।

Q:5 डिजिटलपाण्डुलिपिविज्ञानस्य क्षेत्रे प्रमुखाष्ट्रिय-अन्ताराष्ट्रियशोधकार्याणां सर्वेक्षणम्, उपकरणानां च परिचयं विवेच्यताम् ।

Q:6 भूर्जहस्तप्रतिः विषये विस्तरेण विवेच्यताम् ।

Q:7 तालपत्रेण कः अभिप्रायः ? मातृका लेखने तालपत्रस्योपयोगिता तस्य संरक्षणं विस्तरेण विवेच्यताम् ।

Q:8. ब्राह्मीशारदयोः लिपयोः विषये विस्तरेण लिखत।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. Sanskrit

Course Title: अनुसंधानपद्धति:

Course Code: SHSS SKT 01 C 4105

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1 अनुसंधानस्य स्वरूपं सीमा च विवेच्यताम् ।

Q:2 अनुसंधान-विषयचयने मूलसिद्धान्तानां प्रतिपादयत ।

Q:3 अनुसंधान-सामग्री-सङ्कलनस्य प्रमुखस्रोतांसि विवेचयत ।

Q:4 पाण्डुलिपिसंरक्षणस्य वर्तमान प्रयासानां विवेचनम् ।

Q:5 शोधप्रबन्धस्य प्रारूपं सोदाहरणं प्रतिपादयत ।

Q:6 शोधप्रबन्धनिर्माणस्य मूलसिद्धान्तानां प्रतिपादयत ।

Q:7 संस्कृतशोधकृते संगणकीय उपकरणानां महत्त्वं उपयोगं च प्रतिपादयत ।

Q:8. अधोलिखित श्लोकस्य लिप्यन्तरणम् (IAST Transliteration) लिखतु –

उदासितारं निगृहीतमानसैर्गृहीतमध्यात्मदृशा कथंचन ।

बहिर्विकारं प्रकृतेः पृथग्विदुः पुरातनं त्वां पुरुषं पुराविदः ॥

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Pre-Ph.D. Course work
Course Title: Research Methodology
Course Code: SIAS PS 01 01 01 C

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q: 1 What is research process. Discuss in detail about the various steps of research process.

Q: 2 Define Research problem and discuss in detail about Literature Review using appropriate resources.

Q: 3 Give name of various experimental design to address the research problem and explain various statistical tools for analyzing the significance and interpretation of data

Q: 4 Define Experimental design and explain the following in detail:

- a) Latin Square Design
- b) Factorial Design

Q: 5 Explain in detail about:

- a) Thesis
- b) Research Article
- c) Review Article

Q: 6 Discuss any two in detail:

- a) ANOVA
- b) Bibliographic formatting
- c) Plagiarism

Q: 7 Explain about Institutional Human and Animal Ethics Committee.

Q: 8. Explain in detail the following:

- a) Safety practices and disposal of Bio-waste in the laboratory
- b) Handling and disposable of flammable and hazardous chemical

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme:	Research Programme	Session:	2022-23
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 के उत्तर दीजिए। प्रत्येक प्रश्न समान अंक देता है।*

Q:1. Write a detailed account on how falsification, fabrication and plagiarism affect the research and publication activities. (12 marks)

प्र.1. मिथ्याकरण, निर्माण और साहित्यिक चोरी अनुसंधान और प्रकाशन गतिविधियों को कैसे प्रभावित करती है, इस पर एक विस्तृत विवरण लिखें।

Q:2. How to identify and avoid predatory journals and publishers? (12 marks)

प्र.3. अवैध पत्रिकाओं और प्रकाशकों की पहचान कैसे करें और उनसे कैसे बचें?

Q:3. Discuss about the open access publications and initiatives. (12 marks)

प्र.3. ओपन एक्सेस प्रकाशनों और पहलों के बारे में चर्चा करें।

Q:4. What is the difference between authorship and contributorship? Discuss the ethical issues concerning authorship and contributorship. (12 marks)

प्र.4. लेखकत्व और योगदान के बीच क्या अंतर है? लेखकत्व और योगदान से संबंधित नैतिक मुद्दों पर चर्चा करें।

Q:5. What are author metrics and journal metrics. Explain different journal metrics with examples. (12 marks)

प्र.5. लेखक मेट्रिक्स और जर्नल मेट्रिक्स क्या हैं? विभिन्न जर्नल मेट्रिक्स को उदाहरण सहित विवरण लिखें।

Q:6. Write an essay on selective reporting and misrepresentation of data. (12 marks)

प्र. 6. चुनिंदा रिपोर्टिंग और डेटा की गलत प्रस्तुति पर एक निबंध 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) Philosophy and ethics | अ) दर्शन और नैतिकता |
| b) Penalties for plagiarism as per UGC Regulations, 2018 | ब) यू.जी.सी. नियम, 2018 के अनुसार साहित्यिक चोरी के लिए दंड |
| c) Complaints and appeals | क) शिकायतें और अपीलें |
| d) Journal finders | ड) जर्नल 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) Conflict of interest | अ) हितों का टकराव |
| b) Article processing charges | ब) लेख प्रसंस्करण शुल्क |
| c) Duplicate publications | क) डुप्लिकेट प्रकाशन |
| d) Committee on Publication Ethics (COPE) | ड) कमिटी आन पब्लिकेशन एथिक्स (कोप) |

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Research Programme

Session: 2022-23

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 किन्हीं पाँच प्रश्नों के उत्तर दीजिए। प्रत्येक प्रश्न समान अंक का होता है।

Q. 1. Write short notes on any two of the following topics: (6x2=12 marks)

प्रश्न 1. निम्नलिखित में से किन्हीं दो विषयों पर लघु टिप्पणियाँ लिखें: (6x2=12 अंक)

- a) Plagiarism
- b) Scopus
- c) Article processing charges
- d) UGC CARE Journals

Q. 2. Write short notes on any two of the following topics: (6x2=12 marks)

प्रश्न 2. निम्नलिखित में से किन्हीं दो विषयों पर लघु टिप्पणियाँ लिखें: (6x2=12 अंक)

- a) Self-Plagiarism
- b) Journal finders
- c) Identification of predatory publishers
- d) Open access initiatives

Q.3. Write a detailed note on salami slicing, duplicate and overlapping publications. (12 marks)

प्रश्न 3. सलामी स्लाइसिंग, डुप्लीकेट और ओवरलैपिंग प्रकाशनों पर एक विस्तृत टिप्पणी लिखिए। (12 अंक)

Q.4. 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)

प्रश्न 4. सर्वोत्तम प्रथाओं, मानक स्थापित करने की पहलों और दिशा-निर्देशों के महत्व की व्याख्या अनुसंधान और प्रकाशन क्षेत्र के COPE और WAME के विशेष संदर्भ में करें। (12 अंक)

Q. 5. How does scientific misconduct affect the research and publication activities? Discuss in the context of falsification, fabrication and plagiarism. (12 marks)

प्रश्न 5. वैज्ञानिक कदाचार अनुसंधान और प्रकाशन गतिविधियों को कैसे प्रभावित करता है? मिथ्याकरण, निर्माण और साहित्यिक चोरी के संदर्भ में चर्चा करें। (12 अंक)

Q.6. Discuss the advantages and disadvantages of plagiarism detection software with relevant examples. (12 marks)

प्रश्न 6. प्रासंगिकता के साथ साहित्यिक चोरी का पता लगाने वाले सॉफ्टवेयर के फायदे और नुकसान पर चर्चा करें उदाहरण। (12 अंक)

Q. 7. Write a detailed account on Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP and Cite Score. (12 marks)

प्रश्न 7. जर्नल साइटेशन रिपोर्ट, एसएनआईपी, जर्नल के इम्पैक्ट फैक्टर, एसजेआर, आईपीपी और साइट स्कोर पर विस्तृत विवरण लिखें। (12 अंक)

Q. 8. What is conflict of interest? How should a researcher avoid conflict of interest in research and publication activities? (12 marks)

प्रश्न 8. हितों का टकराव क्या है? एक शोधकर्ता को अनुसंधान और प्रकाशन गतिविधियाँ में हितों के टकराव से कैसे बचना चाहिए? (12 अंक)

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme :Ph.D. (Geography)

Semester : Course Work

Course Title: Research Methodology

Course Code: SBS GEO 02 01 01 C 3104

Session: 2022-23

Max. Time: 3 Hours

Max. Marks : 60

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

Q.1 What is literature review? Explain the use, steps to conduct and literature map with suitable examples.

Q.2 What is research? Explain the approaches and type of research.

Q.3 What is research design? Explain the different type of research design.

Q.4 Explain the different methods of primary data collection.

Q.5 Elaborate the phases of ethnographic research.

Q.6 Explain the sources, reliability, suitability, adequacy and validity of secondary data.

Q.7 Provide a detailed account of steps and significance of report writing.

Q.8 Write a research proposal in brief with a relevant title.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Pre-Ph.D. course work (Pharmaceutical Sciences)

Semester: Course work

Course Title: Novel Drug Delivery Systems

Max. Time: 3 Hours

Course Code: SIAS PS 01 01 05 E

Max. Marks: 60

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

- Q:1. Briefly explain different levels of targeting and describe active and passive targeting with a well-labeled diagram.
- Q:2. Define prodrug with an example and discuss disease targeting using a prodrug approach with its advantage over the conventional approach.
- Q:3. What are disease-based targeting approaches? Briefly describe the novel approaches used to target cancer.
- Q:4. Write a short note on any **TWO** of the following:
- a) Polymer-drug conjugate
 - b) pH-assisted drug delivery system
 - c) Receptor-mediated endocytosis
- Q:5. What is the need for a colon targeting drug delivery system and discuss the different approaches used for colon targeting with a suitable example.
- Q:6. Briefly discuss the advantage of pulmonary drug delivery and different devices used for targeted delivery to lungs.
- Q:7. Give a detailed explanation of novel strategies used for CNS.
- Q:8. Define organelles-based targeting and elaborate on the mitochondria-targeted cancer therapeutics.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. (Pharmaceutical Sciences)

Course Title: CNS Pharmacology

Course Code: SIAS PS 01 01 04 E

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1 (a) Explain the signaling of tyrosine receptor kinases with the help of diagram.

(b) How G proteins and adenylate cyclase are involved in signal transduction pathway?

Q:2 (a) Discuss the transporters involved in calcium homeostasis inside the cell.

(b) Classify ionotropic receptors and describe their pharmacological significance.

Q:3 (a) Explain the Action potential generation mechanism with the help of diagram.

(b) Discuss various receptors involved in Sensory systems.

Q:4 (a) Describe the structure and physiological significance of Hippocampus.

(b) Discuss the cellular and molecular mechanisms of learning and memory.

Q:5 (a) Explain the molecular and cellular mechanisms underlying the pathophysiology of Alzheimer's disease.

(b) Explain the molecular and cellular mechanisms underlying the pathophysiology of Parkinson's disease.

Q:6 (a) Discuss the Epigenetic influences on various Brain disorders.

(b) How free radicals involved in the pathophysiology of neurodegenerative diseases.

Q:7 (a) Discuss the in-vivo models used for the preclinical screening of anxiolytics.

(b) Discuss the in-vivo models used for the preclinical screening of anti-epileptics.

Q:8 (a) Define nootropics. Explain any one preclinical screening of nootropics in detail.

(b) Describe any two in-vivo models for the preclinical screening of drugs for Alzheimer's disease.

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme: Ph.D.
Course Title: Research Methodology
Course Code: SBS MAT 02 01 01 C 6006

Semester: Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q:1 What do you understand by research? Discuss in detail the research proposals. (12)

Q:2 Describe the followings: (12)

(a) Significance of Research

(b) Criteria of good research

(c) Treatise and Monographs

Q:3(a) Why a research design is required? Explain the main features of good research design. (6)

(b) What do you mean by completely randomized design? Explain two group simple and random replication designs briefly. (6)

Q:4 (a) Why factorial design is required. With suitable example explain the complex factorial design. (9)

(b) What are library sources? List the advantages of E-resources. (3)

Q:5 (a) Discuss a Latin square design. What are the advantages of Latin square design over CRD and RBD? (6)

(b) Explain the Type-I and Type-II errors with their applications. (6)

Q:6 (a) What is meant by analysis of variance of the experimental data? (6)

(b) Discuss the requirements of a good experimental design. (6)

Q:7 (a) What is the need of scientific search engines? Enlist the view search engines. (3)

(b) What is the significance of Impact factor and how its calculated.
Explain with suitable examples. (9)

Q:8 (a) What is the difference between bibliography and references.
How citation index is calculated? (6)

(b) What is plagiarism and ethics in research? List the requirements students need to take are before thesis submission. (6)

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Civil Engineering

Session: 2022-23

Semester: Course work

Max. Time: 3 Hours

Course Title: Fluvial Hydraulics and Flood Control

Max. Marks: 60

Course Code: SoET- CE 020103 E4004

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

Q:1 What do you understand by sedimentation? What are the different sediment characteristics?

(4+4+4)

Q:2 What do you mean by fall velocity? What would be the effect of particle shape on fall velocity?

Also discuss effect of concentration on fall velocity.

(4+4+4)

Q:3 Explain Shield diagram and its application. Also draw a neat sketch of Shield diagram. (4+4+4)

Q:4(a) Explain aggradation and degradation in river flow?

(6)

Q:4(b) What is scour? How will you prevent scour around bridge abutment?

(6)

Q:5(a) What do you mean by design flood? What are the empirical formulas for estimating the flood?

(6)

Q:5 (b) Explain Rational method for flood estimation.

(6)

Q:6(a) A flood frequency computations for the river Chambal at Ghandinagar dam by using Gumbel's method yielded the following results.

Return Period T (Years)	Peak Flood(m ³ /sec)
100	435
50	395

Estimate the flood magnitude in the river with a return period of 1000 years.

(6)

Q:6(b) What are the flood frequency methods for flood estimation?

(6)

Q:7(a) What do you understand by routing of a flood? What are the basic equations in hydrologic reservoir routing?

(6)

7(b) What are the basic equations of flood routing? (6)

Q:8(a) How will you control the flood and what are Flood Control measures. (6)

Q:8 (b) Describe about the flood forecasting and warning. (6)

QUESTION PAPER PATTERN
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme: Civil Engineering

Session: 2022-23

Semester: Course work

Max. Time: 3 Hours

Course Title: Fluvial Hydraulics and Flood Control

Max. Marks: 60

Course Code: SoET- CE 020103 E4004

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

Q:1 What do you understand by sedimentation? What are the different sediment characteristics? (4+4+4)

Q:2 What do you mean by fall velocity? What would be the effect of particle shape on fall velocity? Also discuss effect of concentration on fall velocity. (4+4+4)

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Return Period T (Years)	Peak Flood(m ³ /sec)
100	435
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Estimate the flood magnitude in the river with a return period of 1000 years. (6)

Q 6(b) What are the flood frequency methods for flood estimation? (6)

Q:7(a) What do you understand by routing of a flood? What are the basic equations in hydrologic reservoir routing? (6)

7(b) What are the basic equations of flood routing? (6)

Q:8(a) How will you control the flood and what are Flood Control measures. (6)

Q:8 (b) Describe about the flood forecasting and warning. (6)

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D

Course Title: Theories and Methods of Research in Political Science

Course Code: SSH POS 02 (101) C6006

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

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

- Q:1 What is Hypothesis? Discuss the steps involved in formulation of research hypothesis?
- Q:2 Define questionnaire. Discuss different types of questionnaire used in social science research for collecting data.
- Q:3 Define Behaviouralism as an approach to social inquiry. How is it different from traditionalist approach?
- Q:4 What are various types of Sampling? Explain.
- Q:5 Why referencing is important in research? Define APA style of referencing with suitable examples.
- Q:6 Explain Post-Modernism and its fundamental principles.
- Q:7 What are the inductive and deductive methods of theory building in research?
- Q: 8 .Differentiate between Survey research and case research.

QUESTION PAPER PATTERN
CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March 2023

Programme: PhD

Session: 2022-23

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 Discuss the following: (i) Classification of urban places (ii) Spatial limits of urban areas

Q:2 Discuss the urban pollution and health issues in India with suitable examples.

Q:3 Explain the process of urbanization in colonial India.

Q:4 Explain the origins and growth of India's metropolitan cities.

Q:5 Discuss the concept of urban e-governance in details.

Q:6 What is a smart city? Describe the challenges and silent features of the smart city.

Q:7 What is urban sprawl? Discuss the silent features of urban sprawl in India.

Q:8 How is geospatial technology helpful in urban planning and management?

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: Ph.D. Course Work

Session: 2021-22

Semester: 1st

Max. Time: 3 Hours

Course Title: Advances in the area of Library and Information Science (Thematic)

Course Code: SIAS LIS 104 E 2002

Max. Marks: 60

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

Q.1. Discuss about the reasons for growing importance of open access. (12)

Q.2. How would you identify the open access publications of an area of research? Discuss. (12)

Q.3. Describe the process through which you can update yourself in your preferred area of research. (12)

Q.4. Discuss the need for visualization of researcher's outputs? How a researcher can visualize his research outputs in the research community? Discuss. (12)

Q.5. How citation indexes can be useful in your research? Discuss. (12)

Q.6. Mention the step involved in identifying the key contributions in an area of research. (12)

Q.7. How would you identify institutions involved in your preferred area of research? Discuss through an example? (12)

Q.8. Discuss the scope of research area in which you plan to pursue for doctoral degree. (12)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: Ph.D. Course Work

Session: 2021-22

Semester: 1st

Max. Time: 3 Hours

Course Title: Research Methodology in Library and information science

Course Code: SIAS LIS 101 C 4004

Max. Marks: 60

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

Q.1. Mention the process to identify new areas of research. Mention the new areas of research in Library and Information Sciences emerged during last five years (12)

Q.2. Discuss the usefulness of Abstracting and Indexing Sources for carrying out your research and mention in detail about any one such database available in Library and Information Science. (12)

Q.3. How historical methods are useful in LIS research? Make a case of a thesis which used Historical method of research in LIS. (12)

Q.4. What kind of resources you can find in Shodh Ganga repository? How it may be useful in carrying out research? Discuss with examples. (12)

Q.5. What are the methods of data collection? Discuss the various data collection methods used in LIS researches. (12)

Q.6. What is a sample? Discuss the process of sampling and various sampling techniques. (12)

Q.7. Discuss the reasons for growing use of online questionnaire for data collection? Discuss the steps involved making an online questionnaire. (12)

Q.8. Discuss the process of preparing a research proposal, describing its various parts. (12)

हरियाणा केंद्रीय विश्वविद्यालय
सत्रांत परीक्षा, मार्च 2023
एम.ए. (हिंदी अनुवाद), प्रथम सेमेस्टर

हिंदी भाषा का व्याकरण और संरचना

SHSS HNDT 1103 C 5005

पूर्णांक: 60 अंक
अधिकतम समय: 3 घंटे

निर्देश: निम्नलिखित में से किंही पांच प्रश्नों के उत्तर दीजिए. सभी प्रश्नों के अंक सामान हैं.

1. भाषा की परिभाषा और विशेषताएं बताते हुए इसकी उत्पत्ति के प्रश्न पर विचार कीजिए.
2. भाषा के विभिन्न रूपों का परिचय देते हुए राजभाषा और राष्ट्रभाषा के अंतर को समझाइए.
3. शब्द संरचना में प्रत्यय, उपसर्ग, समास, एवं संधि की भूमिका को स्पष्ट कीजिए.
4. शब्दों की विभिन्न व्याकरणिक कोटियों का परिचय प्रस्तुत कीजिए.
5. प्रोक्ति संरचना में पाठ, संदर्भ और प्रकार्य के महत्व को स्पष्ट कीजिए.
6. अर्थ संरचना में संदर्भ और अर्थ तथा शब्द और अर्थ के संदर्भ का महत्व स्पष्ट कीजिए.
7. भाषा संरचना में ध्वनिगत और शब्दगत रूप के महत्व पर प्रकाश डालिए.
8. भाषा संरचना में वाक्य और अर्थगत रूप के महत्व पर प्रकाश डालिए.

हरियाणा केंद्रीय विश्वविद्यालय, महेंद्रगढ़

सत्रांत परीक्षा, मार्च 2023

कार्यक्रम : पीएच.डी. (हिंदी)

सेमेस्टर : कोर्स वर्क

पाठ्यक्रम शीर्षक : शोध प्रविधि

पाठ्यक्रम कोड : SLLCH HND 01 C 101

सत्र : 2022-23

समयावधि : 3 घंटे

अधिकतम अंक : 60

निर्देश : निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

1. शोध का अर्थ बताते हुए शोध और आलोचना में अंतर स्पष्ट कीजिए।
2. शोध के प्रमुख तत्त्वों पर संक्षेप में प्रकाश डालिए।
3. पाठालोचनात्मक शोध पर एक नोट लिखिए।
4. शोध की प्रमुख पद्धतियाँ कौन-कौन सी हैं ? संक्षेप में बताइए।
5. शोध में विषय संकल्पना की भूमिका पर विचार कीजिए।
6. संदर्भ ग्रंथ सूची के निर्माण की प्रविधि समझाइए।
7. शोध की वस्तुनिष्ठता एवं शोधकर्ता की आत्मपरकता को स्पष्ट कीजिए।
8. हिंदी में शोध की प्रमुख समस्याओं को रेखांकित कीजिए।

हरियाणा केंद्रीय विश्वविद्यालय
सत्रांत परीक्षा, मार्च-2023

कार्यक्रम : पीएच.डी. (हिंदी)
सेमेस्टर : I
पाठ्यक्रम का नाम : साहित्य का इतिहास दर्शन
कोर्स कोड : SHSS HND 01 E 103

सत्र : 2022-23
अवधि : 3 घंटे
पूर्णांक : 60

निर्देश : निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

1. साहित्य के इतिहास की अवधारणा पर सारगर्भित निबंध लिखिए।
2. मार्क्सवादी इतिहास-दृष्टि की विवेचना कीजिए।
3. हिंदी साहित्य में काल विभाजन संबंधी विविध मतों की समीक्षा कीजिए।
4. साहित्य इतिहास पुनर्लेखन के महत्त्व पर प्रकाश डालिए।
5. रामचंद्र शुक्ल के इतिहास लेखन की समीक्षा कीजिए।
6. हजारी प्रसाद द्विवेदी की इतिहास-दृष्टि को विवेचित कीजिए।
7. नगेन्द्र की इतिहास-दृष्टि का मूल्यांकन कीजिए।
8. रामविलास शर्मा के साहित्येतिहास संबंधी मतों पर आलोचनात्मक निबंध लिखिए।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: PhD

Semester: Course work

Course Title: Teacher Education

Max. Time: 3 Hour

Course Code: SOE030102E4004

Max. Marks: 60

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

Q:1 Explain the needs & aims and objectives of Teacher Education at Secondary level 4+8= 12

अध्यापक शिक्षा के माध्यमिक स्तर के लक्ष्यों एवं उद्देश्यों की व्याख्या कीजिए।

Q:2 Analyze the main Provisions of School Education and Teacher Education of the Draft of National Education Policy (NEP)2020. 04+08 =12

राष्ट्रीय शिक्षा नीति 2020 के प्रारूप के अनुसार विद्यालयीन शिक्षा और अध्यापक शिक्षा के प्रमुख प्रावधानों का विश्लेषण करो।

Q:3 What are the main contributions or considerations of SARVA SHIKSHA ABHIYAN (SSA) and RASTRIYA MADHYAMIK SHIKSHA ABHIYAN (RMSA) in school Education? Discuss. 12

सर्व शिक्षा अभियान और राष्ट्रीय माध्यमिक शिक्षा अभियान के विद्यालयी शिक्षा के प्रमुख प्रावधानों की चर्चा कीजिये।

Q:4 Justify/prove of relevance of the role and functions of NATIONAL COUNCIL FOR TEACHER EDUCATION (NCTE) OR NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC) 12

राष्ट्रीय अध्यापक शिक्षा परिषद् (एन.सी.टी.ई) अथवा राष्ट्रीय प्रत्यायन परिषद् (एन.ए.ए.सी.)की भूमिका और कार्यों की न्यायसंगतता/सार्थकता सिद्ध कीजिए

Q:5 What do you know regarding the organization of pre-service teacher education programmes? Explain in detail. 12

पूर्व सेवारत अध्यापक शिक्षा के कार्यक्रमों को आयोजित करने के बारे में आप क्या जानते हैं इस बारे में विस्तार से व्याख्या कीजिए।

Q: 6 Enlist the issues and concerns in professional preparation and development of teachers, write the main consideration in brief. 04+08=12

अध्यापकों की व्यावसायिक तैयारी एवं विकास के मुद्दों एवं पहलुओं को सूचीबद्ध कीजिए इनमें प्रमुख की मुद्दों एवं पहलुओं को संक्षिप्त में लिखिए।

Q:7 What are the trends and Challenges of ICT integrated teacher Education in India ? Prove your answer with suitable examples . 12

अध्यापक शिक्षा में सूचना एवं संचार प्रौद्योगिकी के समन्वय की प्रवृत्तियों और चुनौतियों से आप का क्या आशय

है ? अपने उत्तर को उपयुक्त उदाहरणों द्वारा सिद्ध कीजिए।

Q:8. Describe in short any three digital initiatives government e-PG pathshala, Massive Open Online Course(MOOCs) through SWAYAM, Online Educational Resources (OER) and Learning Management System (LMS) 3X4=12

सरकार द्वारा प्रारंभ किये गए किन्हीं तीन तरल/आभासी पहलों/कदमों का संक्षिप्त में वर्णन कीजिए यथा- इ पीजी पाठशाला, स्वयम द्वारा संचालित मैसिव ओपन ऑनलाइन कोर्सेज ,ओपन एज्युकेशन रिसोर्सेज लर्निंग और लर्निंग मनेजमेंट सिस्टम।

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D. (Course Work)

Course Title: STATISTICS AND COMPUTER APPLICATIONS

Course Code: SOE PHE 02 01 02 C4004

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

Instruction: Attempt any five Questions out of the following. Each Question carries equal marks (12 marks each).

Q. 1 (3 x4=12)

- Explain briefly about normal curve?
- What do you mean by skewness and kurtosis?
- Write the formula for calculating skewness and kurtosis?
- What is standard deviation?

Q. 2 (4 x3=12)

- Define hypothesis?
- Explain briefly null hypothesis and alternate hypothesis with examples.
- What do you mean by one-tailed and two-tailed hypothesis?

Q. 3 (4 x3=12)

- What do mean by data in statistics?
- Explain different levels of data?
- What is type I and type II error?

Q. 4 (6 x2=12)

- Calculate Mean of the following data by Assumed Mean Method.

CLASS INTERVAL	FREQUENCY
0-10	9
10-20	10
20-30	14
30-40	15
40-50	12

b. Calculate Median of the following data.

CLASS INTERVAL	FREQUENCY
0-8	10
8-16	12
16-24	18
24-32	26
32-40	17
40-48	9

Q. 5: Calculate the correlation coefficient among height and weight for the below mentioned scores at 5% level of significance. (12 x1=12)

S. No.	Height	Weight
1	5.8	59
2	5.7	59
3	5.4	55
4	5.1	50
5	5.6	54
6	4.3	49
7	4.8	50
8	6	70
9	5.11	68
10	5.10	65

Q. 6: A supplement company predicts that bodybuilders perform more effectively with creatine, or whey protein or mass gainer. To verify this hypothesis. A study was planned by dividing 30 bodybuilders into three groups of ten each. Subjects were divided randomly and were given 30 minutes of exercise. Group one bodybuilders were given creatine before work-out. Group two bodybuilders were given whey protein and group three bodybuilders were given mass gainer. Do the below mentioned data on performances of bodybuilders confirm that the exercising is more effective after intaking particular supplement? Test your hypothesis at 5% level of significance. (12 x1=12)

Creatine Group Performance	Whey-protein Group Performance	Mass Gainer Group Performance
10	6	5
6	8	6
10	5	8
8	6	4

8	5	3
9	10	5
5	5	8
9	4	6
11	6	3
8	5	4

Q. 7: 18 players were randomly chosen for two different types of training. Out of them 9 were given Yogic practices for 15 days and other 9 were given fartlek training. After the training both the groups were tested for their performance level. The data obtained is mentioned in below table. Test your hypothesis at 5% level of significance that which training is better. (12 x1=12)

Yoga Group	Fartlek Group
29	37
24	30
30	26
23	30
25	33
24	34
22	35
33	36
28	32

Q. 8: A shopkeeper owner used to sell chocolates of three different colours. Two hundred and forty school students were asked about their preferences. The responses are shown in below table. Do these data show that all the colours were equally liked by the students? Test your hypothesis at 5% level of significance. (12 x1=12)

COLOURS OF CHOCOLATE	FREQUENCIES
BROWN	100
WHITE	80
DARK BROWN	60

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: CSE
Course Title: Semiconductor Physics
Course Code: BT PHY 117 A

Semester: 1st Course work
Max. Time: 3 Hour
Max. Marks: 60

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

Q:1 Discuss in detail the Kronig – Penny model for a linear lattice. How does it lead to the formation of energy band in solids?

Q:2 The Fermi energy of copper is 7 eV. Calculate (a) The Fermi momentum of electron in copper. (b) de Broglie wavelength of the electron and (c) the Fermi Energy

Q:3 Discuss the effect of donor and acceptor impurities in semiconductors. Explain the action of a P-N junction diode and mention its important applications.

Q:4 What is Hall effect? Explain the terms, mobility of charge carriers and Hall effect. Obtain the expression of Hall coefficient in terms of current density and electronic charges.

Q:5 Explain Fermi-Dirac distribution function. Plot this function for various temperatures including 0K. Determine the resistivity by Four Probe Method.

Q:6 Describe the density of states for 3D, 2D, 1D and 0D systems.

Q:7 Describe the Quantum Wells/Dots and Nanowires and its application in Nanoscience.

Q:8 Describe the differences between Stimulated Emission and Spontaneous Emission. What is laser and its major components.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Pre-Ph.D. course work (Pharmaceutical Sciences)

Semester: Course work

Course Title: Novel Drug Delivery Systems

Max. Time: 3 Hours

Course Code: SIAS PS 01 01 05 E

Max. Marks: 60

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

- Q:1. Briefly explain different levels of targeting and describe active and passive targeting with a well-labeled diagram.
- Q:2. Define prodrug with an example and discuss disease targeting using a prodrug approach with its advantage over the conventional approach.
- Q:3. What are disease-based targeting approaches? Briefly describe the novel approaches used to target cancer.
- Q:4. Write a short note on any **TWO** of the following:
a) Polymer-drug conjugate
b) pH-assisted drug delivery system
c) Receptor-mediated endocytosis
- Q:5. What is the need for a colon targeting drug delivery system and discuss the different approaches used for colon targeting with a suitable example.
- Q:6. Briefly discuss the advantage of pulmonary drug delivery and different devices used for targeted delivery to lungs.
- Q:7. Give a detailed explanation of novel strategies used for CNS.
- Q:8. Define organelles-based targeting and elaborate on the mitochondria-targeted cancer therapeutics.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Tourism & Hotel Management

Course Title: Interdisciplinary Approaches in Tourism & Hotel Management

Course Code: SBMS THM 03 01 03 C 6006

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

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

Q:1 What are the factors influencing the growth of tourism? Can we promote tourism movement without affecting the environment? Explain.

Q:2 Interaction between guest and Host creates win-win situations' comment on the statement with suitable case study and also explain different typology of Tourism.

Q:3 "One of the principles of sustainable tourism development is to improve the quality of life of the host community", Justify this statement"

Q:4 Suggests the measures to empower the local community through sustainable tourism.

Q:5 You have promoted a new destination. Suggest appropriate ways to promote that destination the market.

Q:6 Briefly discuss the factors that marketers should consider while determining the promotion mix for their offerings, giving suitable examples.

Q:7 Discuss the concept of "Responsible", "Alternative" and "community based tourism" with suitable examples

Q:8. Enumerate major advantages of having a National Tourism Plan. Identify essential elements which a good and sound national tourism plan should address

CENTRAL UNIVERSITY OF HARYANA
Term End Examinations, March / April 2023

Programme: Journalism and Mass Communication

Semester: Course work

Course Title: Applications of Statistics and Computer in Research

Max. Time: 3 Hour

Course Code: SHSS DJMC 020103 C3104

Max. Marks: 60

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

Q:1 What do you mean by Central Tendency? When should Mean, Median and Mode be calculated in Media Research?

Q:2 What is t-distribution? How will you Test the Significance of Mean of samples?

Q:3 Write an extensive note on the package of Microsoft Office. Define its Apps and their Utilization.

Q:4 How can we use computers for Quantitative and Qualitative Analysis of Data? Explain.

Q:5 Write comprehensively about the Basics, Functions and Scope of Internet for Research?

Q:6 What is SPSS and how does it benefits Survey Data Analysis?

Q:7 What are the Applications and Scope of Computers in Social Science Research?

Q:8. 'Now a day, one can not only do the Research on Social Media but can also use Social Media as the Tool of Research', Comment on it.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D.

Semester: I

Course work

Course Title: Advanced Analytical Techniques

Max. Time: 3 Hour

Course Code: SIAS MB 02 01 02 C4004

Max. Marks: 60

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

Q:1 How will you define plasmid based on copy numbers? Write the important factors responsible for plasmid stability. How does a plasmid maintain its copy numbers in the host?

Q:2 What do you understand by Next-generation sequencing (NGS)? Describe the sequence by synthesis method of NSG.

Q:3 An enzyme needs to be purified in its native state. Describe in detail about the principle and detailed procedure of the best chromatographic technique of choice to accomplish the objective.

Q:4 Describe the experimental procedure with details of the methodology to be used to identify the protein sequence of an unknown protein. How can its cellular localization be determined?

Q:5 Discuss fed-batch fermentation process and compare it with continuous and batch fermentation processes.

Q:6 Describe the principles and applications of Atomic Force microscopy or Flow cytometry.

Q:7 Write in detail about the GC-MS/MS technique with a suitable diagram, components, applications, and demerits?

Q:8. Write in detail about the X-Ray Diffraction technique with a suitable diagram, components, applications, and demerits?

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: Ph.D.

Course Title: Advanced Data Structures and Algorithms

Course Code: SOET CS 020103E 4004

Semester: Course work

Max. Time: 3 Hour

Max. Marks: 60

Instruction: Attempt any five questions out of the following. Each question carries equal marks (12 X 5 = 60).

- Q1: Discuss the need and importance of good data structure. Discuss a strategy to choose an appropriate data structure. [12]
- Q2: 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 [12]
- Q3: Define the Competitive Analysis (online algorithms). Write an algorithm for merge sort. [12]
- Q4: a) Explain Prim's algorithm to find minimum cost spanning tree. [6]
b) Write the Dijkstra's shortest path algorithm. [6]
- Q5: Write short notes on the following topics:
a) Suffix Arrays [6]
b) Knuth-Morris-Pratt Algorithm for string matching. [6]
- Q6: What is Knapsack problem? Find an optimal solution for the fractional knapsack problem $l = \langle 1, 12, 13, 14, 15 \rangle$, $w = \langle 5, 10, 20, 30, 40 \rangle$, $v = \langle 30, 20, 100, 90, 160 \rangle$. The capacity of knapsack $W = 60$ [12]
- Q7: Write the Recursive Quick Sort algorithm. Take an example and apply Recursive Quick Sort Algorithm to sort it. Also write quick sort algorithm's complexity for Best, Average, and Worst case. [12]
- Q8: Write short notes on the following topics:
a) k-server problem [6]
b) Online Paging Problem [6]

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, March 2023

Programme: PhD Nutrition Biology

Session: 2022-23

Semester: 1st

Max. Time: 3 Hours

Course Title: Advanced Analytical Techniques

Max. Marks: 60

Course Code: SIAS NB 02 01 02 C 4004

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

Q.1 What do you mean by DNA sequencing? Explain any method of DNA sequencing in detail. (12 Marks)

Q.2 What is PCR? Also write down the principle, types and applications of PCR. (12 Marks)

Q.3 What is chromatography? Briefly discuss various methods of chromatography. (12 Marks)

Q.4 What is electrophoresis? Write down detailed note on 1D polyacrylamide gel electrophoresis. (12 Marks)

Q.5 Explain in detail about microbial growth and kinetics. (12 Marks)

Q.6 What is biosafety? Discuss about the types of biosafety cabinets used in research laboratory. (12 Marks)

Q.7 Explain about the handling, maintenance and feed formulation for an experimental animal. (12 Marks)

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

A. Enzymes generally used in cloning

B. Immunochemical detection of proteins

C. Isolation and purification of proteins

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2023

Programme: Ph.D. Course Work

Session: 2022-23

Semester: 1st

Max. Time: 3 Hours

Course Title: SDGs and Information Management

Course Code: SIAS LIS 106 C 2002

Max. Marks: 60

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

- Q.1. Why are Sustainable Development Goals important for every country? Discuss. (12)
- Q. 2 Explain and discuss about the two key SDGs relating to information and libraries. (12)
- Q,3, What is the special about the 2030 agenda for SDGs in regard to Education? Discuss. (12)
- Q.4. Discuss about the key projects of IFLA addressing the SDGs in Libraries? Discuss. (12)
- Q.5. What are the areas of SDGs suitable for libraries? Describe. (12)
- Q.6. Describe any two stories of libraries having made efforts for achieving SDG. (12)
- Q.7 How SDG is included in the LIS courses being taught at CUH. (12)
- Q.8. What are the key agenda for SDGs in the area of education and literacy? Discuss based on the NEP 2020 (12)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2023

Programme: Ph.D. Course Work

Session: 2022-23

Semester: 1st

Max. Time: 3 Hours

Course Title: SDGs and Information Management

Course Code: SIAS LIS 106 C 2002

Max. Marks: 60

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

Q.1. Why are Sustainable Development Goals important for every country? Discuss. (12)

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