

Seat No.	
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SLR-CW-97

Ph. D. Course Work Examination-2022

Engineering Paper- I

Research Methodology And Information Communication Technology

Total Marks : 100

- Instructions:** 1). Attempt **all** the questions.
2). Figures to the **right** indicate **full** marks.

1. A) Focus on limitations of Scientific Explanation 10
- B) Write Short notes on **any two**: 10
- i) Types of Research
- ii) Inductive Research
- iii) Research Process
2. A) Discuss the features of a good research design 10
- B) Write Short notes on **any two**: 10
- i) Review of Literature
- ii) Research Problems
- iii) Qualities of good research
3. A) Explain the primary and secondary data with examples. 10
- B) Write Short notes on **any two** 10
- i) Case Study
- ii) Writing of Report
- iv) Excavation
4. A) how is a hypothesis tested? 10
- B) Write Short notes on **any two** 10
- i) Random sampling
- ii) Correlation and Regression
- iii) Chi-square test
5. A) Explain the different ways of presenting the data. 10
- B) Write Short notes on **any two** 10
- i) Information Communication Technology
- ii) H- Index factor
- iii) ISSN and ISBN

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SLR-CW-110

Ph.D Course Work Examination-2022

Sub: Commerce- Research Methodology and Information Comm. Tech. (ICT)

Ph. D. Course Work Examination Total Marks: 100

Instruction: All questions are compulsory.

- Que 1) A) Describe briefly probability methods of sampling and non-probability methods of sampling. 10 Marks
- B) Write short answer any two of the following. 10 Marks
- 1) Explain the characteristics of a hypothesis.
- 2) What are important sources of research problems?
- 3) What are the different type of statistical averages? Explain its importance.
- Que 2) A) What are the different methods used in the collection of primary statistical data? Explain advantageous and disadvantageous of primary data. 10 Marks
- B) Write short notes on any two of the following: 10 Marks
- 1) Stratified Sampling
- 2) SPSS
- 3) Tabulation and graphical presentation
- Que 3) A) Explain important steps of scientific research process. 10 Marks
- B) Write short answer any two of the following. 10 Marks
- 1) What are characteristics of a good research design?
- 2) A fertilizer manufacturing company applies its own fertilizer to 5 plots which give the average yield of 100 kgs. On applying its competitor's product to another set of 9 plots, the average yield comes to 125 kgs. Combined standard deviation for the 2 sets of 14 plots is 5.7. Is there any evidence of difference between the yields in the 2 samples? Use 5% level of significance.
- 3) What are essentials of sampling method?

Que 4) A) What is the significance of statistics in research? Explain specific application of measures of dispersion. 10 Marks

B) Write short notes on any two of the following: 10 Marks

1) Data Processing

2) Secondary Data

3) Law of Statistical regularity

Que 5) A) What are advantageous and disadvantageous of computer application for research? 10 Marks

B) Write short answer any two of the following. 10 Marks

1) What are various stages of report writing?

2) Draft a suitable questionnaire for studying passenger's satisfaction on services of railways.

3) What is the importance of hypothesis in research?

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SLR-CW-57

Ph. D. Course Work Examination-2022
SOCIAL SCIENCE
Paper – I (Compulsory)
Research Methodology And Information Communication Technology
Total Marks : 100

- Instructions:** 1). Attempt **all** the questions.
2). Figures to the **right** indicate **full** marks.

- | | |
|---|----|
| 1. A) Focus on limitations of Scientific Explanation | 10 |
| B) Write Short notes on any two : | 10 |
| i) Types of Research | |
| ii) Inductive Research | |
| iii) Research Process | |
| 2. A) Discuss the features of a good research design | 10 |
| B) Write Short notes on any two : | 10 |
| i) Review of Literature | |
| ii) Research Problems | |
| iii) Qualities of good research | |
| 3. A) Explain the primary and secondary data with examples. | 10 |
| B) Write Short notes on any two | 10 |
| i) Case Study | |
| ii) Writing of Report | |
| iv) Excavation | |
| 4. A) how is a hypothesis tested? | 10 |
| B) Write Short notes on any two | 10 |
| i) Random sampling | |
| ii) Correlation and Regression | |
| iii) Chi-square test | |
| 5. A) Explain the different ways of presenting the data. | 10 |
| B) Write Short notes on any two | 10 |
| i) Information Communication Technology | |
| ii) H- Index factor | |
| iii) ISSN and ISBN | |

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Ph.D Course Work Examination-2022

Paper I

SLR-CW-30

Research methodology and ICT

Total Marks: 100

N. B. 1) All questions are compulsory

2) Figures to the right indicate marks

Q1. A) Explain meaning, nature and scope of research. 10

B) Write short answers (any two) 10

i) Types of research

ii) Qualities of good researcher

iii) Use of Power Point

Q2. A) Explain use of computer in research. 10

B) Write short note on (any two) 10

i) PDF file

ii) SPSS

iii) MS Excel

Q3.A) Explain use of internet in research. 10

B) Write short note on (any two) 10

i) Impact factor

ii) AIHC

iii) H Index

Q4. A) Explain the Data analysis process 10

B) Write short note on (any two) 10

i) Use of maps in research

ii) Use of literature

iii) Survey method

Q5. A) Discuss the various steps in thesis writing. 10

B) Write short note on (any two) 10

i) Research Design

ii) Archaeological research

iii) Primary data collection

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Ph.D Course Work Examination-2022
Research Methology And ICT

SLR-CW-30

मराठी रूपांतर

एकूण गुण: १००

सूचना: १) सर्व प्रश्न अनिवार्य आहेत.

२ उजवीकडील अंक गुण दर्शवितात.

प्र.१ अ) संशोधनाचा अर्थ, स्वरूप व व्याप्ती स्पष्ट करा.

१०

ब) थोडक्यात उत्तरे द्या. (कोणतीही दोन)

१०

i) संशोधनाचे प्रकार

ii) चांगल्या संशोधकाचे गुण

iii) पॉवरपॉइंटचा उपयोग

प्र.२ अ) संशोधनामध्ये संगणकाचा वापर स्पष्ट करा.

१०

ब) थोडक्यात टीपा लिहा. (कोणत्याही दोन)

१०

i) पीडीफ फाईल

ii) एसपीएसएस

iii) एमएस एक्सेल

प्र.३ अ) इंटरनेटचा संशोधनामध्ये वापर स्पष्ट करा.

१०

ब) थोडक्यात टीपा लिहा. (कोणत्याही दोन)

१०

i) इम्पॅक्ट फॅक्टर

ii) एआयएचसी

iii) एच. इंडेक्स

प्र.४ अ) माहिती विश्लेषणाची प्रक्रिया स्पष्ट करा.

ब) थोडक्यात टीपा लिहा. (कोणत्याही दोन)

१०

i) संशोधनामध्ये नकाशांचा वापर

ii) साहित्याचा वापर

iii) सर्वेक्षण पध्दती

प्र.५ अ) प्रबंध लिखाणातील विविध पायऱ्यांची चर्चा करा.

१०

ब) थोडक्यात टीपा लिहा. (कोणत्याही दोन)

१०

i) प्रबंधाचा आराखडा

ii) पुरातत्वीय संशोधन

iii) प्राथमिक माहिती संकलन

PhD Course Work Examination, 2022 (Hindi)
Research Methodology and Information Communication Technology (ICT)
Paper - I अनुसंधान प्रक्रिया, जानकारी और तकनीक

Total Marks : 100

सूचनाएँ

- सभी प्रश्न अनिवार्य हैं।
- दाईं ओर प्रश्न के पूर्णांक हैं।

-
- प्रश्न 1 (अ) अनुसंधान की अवधारणा स्पष्ट कर अनुसंधान की व्याप्ति लिखिए। 10
(ब) किन्हीं दो के संक्षेप में उत्तर लिखिए। 10
- I. ऐतिहासिक अनुसंधान
 - II. भाषा वैज्ञानिक अनुसंधान
 - III. लेखक विशेष अनुसंधान
- प्रश्न 2 (अ) भाषा संबंधी शोध की विभिन्न प्रविधियों पर प्रकाश डालिए। 10
ब) किन्हीं दो के संक्षेप में उत्तर लिखिए। 10
- I. पॉवर प्वाइंट प्रेजेंटेशन
 - II. सहायक ग्रंथसूची
 - III. सामग्री संकलन
- प्रश्न 3 (अ) शोध के क्षेत्र में अनूदित व तुलनात्मक साहित्यानुसंधान का महत्व सोदाहरण लिखिए। 10
ब) किन्हीं दो के संक्षेप में उत्तर लिखिए। 10
- I. क्षेत्रकार्य
 - II. लेखक विशेष अनुसंधान
 - III. पूर्वाभ्यास
- प्रश्न 4 (अ) लोकसाहित्य की अवधारणा स्पष्ट कर लोकसाहित्य में शोध का महत्व सोदाहरण लिखिए। 10
ब) किन्हीं दो के संक्षेप में उत्तर लिखिए। 10
- I. पाद टिप्पणी
 - II. वर्गीकरण
 - III. अनुसंधान पद्धति
- प्रश्न 5 (अ) बोली विषयक अनुसंधान का स्वरूप तथा उसकी विधियों पर प्रकाश डालिए। 10
ब) किन्हीं दो के संक्षेप में उत्तर लिखिए। 10
- I. ई-जर्नल्स
 - II. इ-मेल भेजने की प्रक्रिया
 - III. संदर्भ लेखन

Ph.D Course Work Exam-2022

(Common Paper for Faculty of Arts & Fine Arts)
अभ्यासपत्रिका क्र. १ : संशोधन पद्धती व माहिती तंत्रज्ञान
एकूण गुण : १००

सूचना : सर्व प्रश्न आवश्यक आहेत

प्रश्न क्र.१.अ) संशोधनाची संकल्पना, स्वरूप आणि विशेष स्पष्ट करा. १० गुण

ब) लघुत्तरी प्रश्न. (कोणतेही दोन) १० गुण

१. संशोधनाची उद्दिष्टे स्पष्ट करा.
२. साहित्याच्या संशोधनाचे वेगळेपण विशद करा.
३. साहित्य संशोधन आणि समीक्षा यातील परस्पर संबंध स्पष्ट करा.

प्रश्न क्र.२.अ) संशोधनाच्या विविध पद्धतींचा आढावा घ्या. १० गुण

ब) लघुत्तरी प्रश्न. (कोणतेही दोन) १० गुण

१. वर्णनात्मक संशोधन पद्धतीचे स्वरूप विशद करा.
२. ऐतिहासिक संशोधन पद्धतीचे महत्त्व विशद करा.
३. क्षेत्रीय सर्वेक्षण पद्धतीचे विशेष स्पष्ट करा.

प्रश्न क्र.३.अ) अनुवाद व तौलनिक साहित्य संशोधनाचे स्वरूप विशद करा. १० गुण

ब) लघुत्तरी प्रश्न. (कोणतेही दोन) १० गुण

१. भाषाभ्यासाच्या विविध पद्धती स्पष्ट करा.
२. बोली अभ्यासाचे स्वरूप विशद करा.
३. भाषा वैज्ञानिक अभ्यासाचे वेगळेपण विशद करा.

प्रश्न क्र.४.अ) लोकसाहित्याच्या संशोधनाचे स्वरूप स्पष्ट करा. १० गुण

ब) लघुत्तरी प्रश्न. (कोणतेही दोन) १० गुण

१. विशिष्ट लेखकाचा अभ्यास कसा केला जातो, ते विशद करा.
२. विशिष्ट वाङ्मयप्रकाराच्या संशोधनाचे स्वरूप स्पष्ट करा.
३. विशिष्ट कालखंडाच्या अभ्यासाचे महत्त्व विशद करा.

प्रश्न क्र.५.अ) संशोधन कार्यात माहिती तंत्रज्ञानाचे महत्त्व स्पष्ट करा. १० गुण

ब) लघुत्तरी प्रश्न. (कोणतेही दोन) १० गुण

१. संशोधनपर लेखनातील गृहितक ही संकल्पना स्पष्ट करा.
२. प्रबंध लेखनात पूर्वाभ्यासाचे महत्त्व विशद करा.
३. प्रबंध लेखनात संदर्भ देण्याची पद्धत व तिचे महत्त्व स्पष्ट करा.

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SLR-CW-1

Ph.D Course Work Exam-2022

Paper No.I Research Methology

Ph.D Course Work Exam (Research Methodology) 100 Marks

Ques.1) Answer Any one of the following

20Marks

खालीलपैकी कोणत्याही एकाचे उत्तर द्या.

A) Define Research. Explain its types and importance.

संशोधन परिभाषित करा. त्याचे प्रकार आणि महत्त्व स्पष्ट करा.

B) How research problems are defined and formulated? Describe the necessity of defining the research problem.

संशोधन समस्या कशा परिभाषित आणि तयार केल्या जातात? संशोधन समस्या परिभाषित करण्याच्या आवश्यकतेचे वर्णन करा.

Ques.2) Answer any one of the following

20Marks

खालीलपैकी कोणत्याही एकाचे उत्तर द्या.

A) What are the traditional methods of research?

संशोधनाच्या पारंपारिक पद्धती काय आहेत?

B) What are the Ethnographic and Documentation methods of research?

संशोधनाच्या एथनोग्राफिक आणि डॉक्युमेंटेशन पद्धती काय आहेत?

Ques.3) Answer any two of the following

खालीलपैकी कोणत्याही दोनची उत्तरे द्या.

A) Explain the basic principles, need and features of research design.

10Marks

संशोधन डिझाइनची मूलभूत तत्त्वे, गरजा आणि वैशिष्ट्ये स्पष्ट करा.

B) What is Research Design? Explain the classification of Research Design.

10Marks

संशोधन डिझाइन म्हणजे काय? संशोधन डिझाइनचे वर्गीकरण स्पष्ट करा.

C) Describe data analysis with statistical tools.

10Marks

सांख्यिकीय साधनांसह डेटा विश्लेषणाचे वर्णन करा.

Ques.4) Answer any two of the following.

खालीलपैकी कोणत्याही दोनची उत्तरे द्या.

A) Explain the hypothesis testing in detail.

10Marks

परिकल्पना चाचणीचे तपशीलवार वर्णन करा.

B) Explain types of report and Significance of report writing.

10Marks

अहवालाचे प्रकार आणि अहवाल लेखनाचे महत्त्व स्पष्ट करा.

C) Explain bibliography and Webliography in detail.

10Marks

संदर्भग्रंथ आणि वेबलिओग्राफी तपशीलवार समजावून सांगा.

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Ph.D. Course Work Examination, 2022
MECHANICAL ENGINEERING (Paper – II)
Recent Trends in Mechanical Engineering from
Technology Management Perspective

Day and Date :

Total Marks : 100

Time :

1. a) Explain Clearly : 10
- 1) Mission Flow Diagram
 - 2) Impact of Technology on Business and Society
 - 3) Speed of Diffusion
 - 4) Technology Sourcing
- b) Explain **any two** from the following : 10
- 1) Explain the following related to technology:
 - i) Process and Product Technology
 - ii) Linkage between technology, development and competition.
 - 2) Explain the environment impact analysis in Technology Management.
 - 3) Explain the following :
 - a) Acquisition of Technology
 - b) Creativity and Innovation
2. a) Explain the stages in developing a marketable product 10
- b) Explain any two of the following: 10
- 1) Technology Monitoring
 - 2) Extrapolation
 - 3) Growth Curves.
3. a) What is Technology Forecasting? Explain the techniques and applications 10
- b) Explain **any two** from the following : 10
- 1) Technology Transfer Process
 - 2) Joint Ventures
 - 3) Technology Assessment
4. a) Explain the project management in adoption and implementation of new technologies 10
- b) Explain **any two** from the following : 10
- 1) Qualities of a successful technical entrepreneur.
 - 2) Necessity of the integration of technology and people
 - 3) Technology choice approach.

5. a) Explain the organizational and psychological factors in Technology Management. 10
- b) Explain **any two** from the following : 10
- 1) Explain the factors affecting the growth of technical entrepreneurship.
 - 2) Explain the technology push approach and the requirement of technology push for entrepreneurship
 - 3) Explain the challenges in technology management.
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Ph.D Course Work Examination 2022
Paper- II
Subject: Zoology (Recent Trends in Zoology)

Instruction: 1. All questions carry equal marks.
2. Attempt all Questions.

Marks - 100

Que. 1. Describe role of mosquito species in the life-cycle of Plasmodium vivax and Wuchereria Bancroft.

(20 Marks)

Que. 2. Write in detail on how cytological and biochemical trends in Taxonomy are modern trends, illustrate with a suitable example.

(20 Marks)

Que. 3. Write short answers on the following. (Any Two) (20 Marks)

A) Green house effect and global warming.
B) Methods of animal cell culture. Explain importance of animal cell culture.
C) Describe how Echinococcus granulosus produce a disease in human.

Que. 4. Describe PCR techniques and its applications in biotechnology, explain with a suitable example. (20 Marks)

Que. 5. Write short answers on the following. (Any Two) (20 Marks)

A) Various categories or taxa used in animal classification, start from Kingdom and end to sub-species.
B) Describe principle of Lowry's Method for protein analysis from given tissue sample.
C) Describe characters of pathology of bacterium that cause tuberculosis.

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SLR-CW: common

Ph.D Course Work Examination-2022

Paper-II A (Information And Computer Technology)

Max Marks: 40

Ques. 1) Answer any one of the following (Long Answer Question) 20 Marks

- A) Write note on Online Survey Tools. Describe collaborative data collection and writing tools.
- B) Give information on Word Processing by giving details of word processing, editing text and formatting.

Ques. 2) Answer any Two of the following (Short Answer Question)

- A) Elaborate the role of ICT in research. 10 Marks
- B) What are the uses of ICT Tools and their impact on Educational, Social and Economic Development? 10 Marks
- C) Outline the National, International procedure for filling Patents and their e-submission. 10 Marks

प्रश्न. 1) खालीलपैकी कोणत्याही एकाचे (दीर्घ उत्तर प्रश्न)

20 गुणांचे

अ) ऑनलाइन सर्वेक्षण साधनांवर टीप लिहा. सहयोगी डेटा संकलन आणि लेखन साधनांचे वर्णन करा.

ब) वर्ड प्रोसेसिंग, मजकूर संपादित करणे आणि फॉर्मॅटिंगचे तपशील देऊन वर्ड प्रोसेसिंगची माहिती द्या.

प्रश्न. 2) खालीलपैकी कोणत्याही दोनची उत्तरे द्या (लहान उत्तर प्रश्न)

अ) संशोधनात ICT ची भूमिका स्पष्ट करा.

10 गुण

ब) ICT टूल्सचे उपयोग काय आहेत आणि त्यांचा शैक्षणिक, सामाजिक आणि आर्थिक विकासावर काय परिणाम होतो?

10 गुण

क) पेटंट फाईल करण्यासाठी आणि त्यांच्या ई-सबमिशनसाठी राष्ट्रीय, आंतरराष्ट्रीय प्रक्रियेची रूपरेषा लिहा.

10 गुण

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No.

SLR-CW- common

Ph.D Course Work Examination-2022
Paper- II B (Research And Public Ethics)

Max Marks: 40

Ques. 1) Answer any one of the following (Long Answer Question)

20 Marks

- A) Elaborate the publication misconduct and describe use of different plagiarism software tools
- B) Explain publication ethics with the help of its different aspects.

Ques. 2) Answer any Two of the following (Short Answer Question)

A) What is impact factor of journal? How it is calculated?

10 Marks

B) What are the nature and scope of Philosophy

10 Marks

C) What are the ethics with respect to science and research?

10 Marks

Paper-II B Research And Public Ethics

प्रश्न. 1) खालीलपैकी कोणत्याही एकाचे (दीर्घ उत्तर प्रश्न) 20 गुणांचे

अ) प्रकाशनातील गैरवर्तन विस्तृत करा आणि विविध साहित्यिक चोरी सॉफ्टवेअर साधनांच्या वापराचे वर्णन करा

ब) प्रकाशन नैतिकता त्याच्या विविध पैलूंच्या मदतीने स्पष्ट करा.

प्रश्न. 2) खालीलपैकी कोणत्याही दोनची उत्तरे द्या (लहान उत्तर प्रश्न)

अ) जर्नलचा प्रभाव घटक (impact factor) म्हणजे काय? त्याची गणना कशी केली जाते? 10 गुण

ब) तत्त्वज्ञानाचे स्वरूप आणि व्याप्ती काय आहे 10 गुण

क) विज्ञान आणि संशोधनाच्या संदर्भात नैतिकता काय आहे? 10 गुण

Seat No.	
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SLR-CW-66

Ph.D Course Work Examination - 2022**Subject: Physics****Paper No. II****Name of Paper- Recent Trends in Physics****Day and Date:****Total Marks-100****Time****Instructions: All questions are compulsory**

Q. 1.A) How atomic form and structure factor is calculated in simple cubic system. [10]

B) Attempt any two from the following [10]

- i) Using structure factor relations determine the conditions on h, k, l for diffraction in case of bcc crystal system.
- ii) Explain mechanism of generation of characteristic X – ray.
- iii) What is the effect of ionic radius on to the lattice parameters?

Q.2 A) Discuss different vibration modes of IR spectroscopy and Enumerate applications of IR spectroscopy. (10)

B) Attempt any two from the following (10)

- i) Explain in detail diatomic molecule as simple harmonic oscillator.
- ii) Write the advantages of FTIR over IR spectroscopy.
- iii) Draw and explain energy levels in Infra-red absorption

Q.3A) Explicate various imaging modes of Atomic Force Microscopy (AFM). [10]

B) Attempt any two from the following (10)

- i) AFM Nanolithography
- ii) Adhesion measurement
- iii) Molecular recognition

Q. 4 A) What is XPS? How we can calculate chemical shift, quantification, and depth-Profiling using XPS? [10]

B) Attempt any two from the following [10]

- i) Attenuated Total Reflection.
- ii) Energy losses in XPS.
- iii) Koopmans Theorem in XPS.

Q. 5 A) Deduce the principle of FESEM. Explain construction, working of FESEM and also state the advantages over conventional SEM. (10)

B) Attempt any two from the following [10]

- i) Image formation in SEM.
- ii) Write a note on HRTEM
- iii) Write a note on SAED

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SLR-CW-60

Ph.D Course Work Examination-2022

**Geography (Paper II)
Recent Trends in Geography**

Max marks:100

Instruction ; All question are compulsory

- | | | |
|-------|---|----|
| Q.1A | Describe the contribution of geography in Ancient period. | 10 |
| Q.1B | Short answer types. (Any Two) | 10 |
| | 1. Geography in Ancient India. | |
| | 2. Cultural determinism. | |
| | 3. Holistic approach. | |
| Q.2A | Define region and describe the various region. | 10 |
| Q.2B | Short answer types. (Any Two) | 10 |
| | 1. Contribution of Carl Ritter in Geography. | |
| | 2. Idiographic approach in geography. | |
| | 3. Geography and industrial development. | |
| Q.3A | Describe the behavioural approach in geography and explain its delimitations. | 10 |
| Q.3B | Short answer types. (Any Two) | 10 |
| | 1. Contribution of Fridrich Ratzel in geography. | |
| | 2. Concept of Region. | |
| | 3. Human resource management. | |
| Q.4 A | Write the significance of regional geography. | 10 |
| Q.4B | Short answer types .(Any Two) | 10 |
| | 1. Significance of theories in geography. | |
| | 2. Importance of measurement in geography. | |
| | 3. Significance of models in geography. | |
| Q.5 A | What is the role of geography model in social development. | 10 |
| Q.5B | Short answer types. (Any Two) | 10 |
| | 1. Importance of scaling in geography. | |
| | 2. Application of geography in planning of health care. | |
| | 3. Stage of regionalization. | |

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SLR-CW-33

Paper- II

Ph. D. Course Work Examination-2022
Subject: Recent Trends in International Economics

Time: 3: 00 Hrs.

Marks: 100

- N.B.: 1) All questions are compulsory.
2) Draw suitable diagrams
3) Figures to write indicate full marks

Q.1 A). Explain the important factors determining the size of gains from international trade. (10)

B) Short Answer (Any Two) (10)

1. What is dumping? Explain its implications.
2. Explain the factors affecting terms of trade.
3. Explain the effects of devaluation on Terms of Trade.

Q. 2 A) Critically evaluate Vernon's product cycle theory. (10)

B) Short Answer (Any Two) (10)

1. Explain the Linder's theory of representative demand.
2. Explain the technology gap theory with suitable diagram.
3. Explain the Emmanuel's unequal exchange theory.

Q. 3 A) Explain briefly the important agreements of WTO. (10)

B) Short Answer (Any Two) (10)

1. Explain the principles of WTO.
2. Write a note on "Dunkel Draft".
3. Examine the achievements of WTO.

Q.4 A) Explain the export promotion measures of Indian government. (10)

B) Short Answer (Any Two) (10)

1. Explain changing direction of India's foreign trade after 1991.
2. Explain the features of Indian Foreign Trade Policy after 1991.
3. Explain the impact of liberalisation on India's foreign trade.

Q. 5 A) Explain the role of FDI in developing countries. (10)

B) Short Answer (Any Two) (10)

1. Explain the Objectives of SEZs in India.
2. Explain the disadvantages of foreign direct investment.
3. Explain the Complementarities between Human Capital development and export growth.

Seat No.	
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Ph.D Course Work Examination-2022

Paper- II

Recent Trends In International Economics

SLR-CW-33

सुचना:

- १) सर्व प्रश्न सोडविणे आवश्यक आहे.
- २) योग्य ठिकाणी सुबक आकृत्या काढा .
- ३) उजवीकडील अंक गुण दर्शवितात .

- प्र. १ अ) आंतरराष्ट्रीय व्यापाराच्या फायद्या-तोट्यांचे आकारमान ठरविण्याच्या महत्वाच्या घटकांचे स्पष्टीकरण करा. (१०)
- प्र १. ब) लघुत्तरी प्रश्न (कोणतेही दोन) (१०)
१. अवपुंजन म्हणजे काय ? त्याचे परिणाम स्पष्ट करा .
 २. व्यापार शर्तीवर परिणाम करणारे घटक स्पष्ट करा.
 ३. अवमूल्यनाचे व्यापारशर्तीवर होणारे परिणाम स्पष्ट करा.
- प्र. २ अ) व्हेरनॉन यांच्या वस्तुचक्र सिद्धान्ताचे स्पष्टीकरण करा. (१०)
- प्र २. ब) .लघुत्तरी प्रश्न (कोणतेही दोन) (१०)
१. लॅंडर यांच्या प्रतिनिधित्व मागणी सिद्धांताचे स्पष्टीकरण करा.
 - २.तांत्रिक दरी सिद्धान्ताचे स्पष्टीकरण योग्य आकृतीच्या सहाय्यने करा.
 ३. ईम्यान्यूएल यांच्या असमान विनिमय सिद्धांताचे स्पष्टीकरण करा.
- प्र. ३. अ) जागतिक व्यापार संघटनेच्या महत्वाच्या करारांचे थोडक्यात स्पष्टीकरण करा. (१०)
- प्र.३ ब) लघुत्तरी प्रश्न (कोणतेही दोन) (१०)
१. जागतिक व्यापार संघटनेची तत्वे थोडक्यात स्पष्ट करा.
 २. 'डंकल ड्राफ्टचे थोडक्यात स्पष्टीकरण करा.
 ३. जागतिक व्यापार संघटनेने साध्य केलेली सफलता स्पष्ट करा.
- प्र ४. अ) भारत सरकारच्या निर्यात वाढीसाठीच्या उपाययोजनां स्पष्ट करा. (१०)
- प्र.४. ब). लघुत्तरी प्रश्न (कोणतेही दोन) (१०)
१. १९९१ नंतरच्या भारतीय विदेशी व्यापाराची बदलती दिशा स्पष्ट करा.
 २. १९९१ नंतरच्या भारताच्या विदेशी धोरणाची वैशिष्ट्ये स्पष्ट करा.
 ३. उदारीकरणाचे भारताच्या विदेशी व्यापारावरील परिणाम स्पष्ट करा.
- प्र.५. अ) प्रत्यक्ष विदेशी गुंतवणुकीची विकसनशील देशामधील भूमिका स्पष्ट करा. (१०)
- प्र.५. ब). लघुत्तरी प्रश्न (कोणतेही दोन) (१०)
१. भारतातील विशेष आर्थिक क्षेत्राची वैशिष्ट्ये स्पष्ट करा.
 २. प्रत्यक्ष विदेशी गुंतवणुकीचे तोटे स्पष्ट करा.
 २. मानवी भांडवल विकास व निर्यात वृद्धी या मधील परस्पर पूरकता स्पष्ट करा.

Seat
No.

Faculty of Arts

Ph. D. Course Work Examination -2022

SLR-CW-5

Subject: Marathi Paper No.: 2

Name of the Paper: मराठी साहित्यातील नवे प्रवाह

Time: 3:00 Hr.

Marks: 100

सूचना : सर्व प्रश्न आवश्यक आहेत.

- प्रश्न क्र. १ अ) 'साहित्यात प्रवाह निर्माण होणे जिवंतपणाचे लक्षण असून त्यामुळे साहित्याच्या कक्षा रुंदावतात', या विधानाचा साधारण परामर्श द्या. गुण १०
- ब) थोडक्यात उत्तरे लिहा. (कोणतीही दोन) गुण १०
१. स्वातंत्र्योत्तर कालखंडातील मराठी साहित्य प्रवाह निर्मितीची पार्श्वभूमी लिहा.
 २. सामाजिक चळवळ आणि साहित्यप्रवाह यांचा सहसंबंध स्पष्ट करा.
 ३. साहित्य प्रवाहामुळे भाषिक आविष्कारात कशी भर पडली ते लिहा.
- प्रश्न क्र. २ अ) ग्रामीण साहित्याची संकल्पना स्पष्ट करून त्याचे स्वरूप लिहा. गुण १०
- ब) थोडक्यात उत्तरे लिहा. (कोणतीही दोन) गुण १०
१. 'म. फुले यांचे लेखन म्हणजे ग्रामीण साहित्याचा पहिला-वहिला परंतु सशक्त आविष्कार होय.' या विधानाचा परामर्श द्या.
 २. ग्रामीण साहित्याच्या प्रेरणा आणि विशेष लिहा.
 ३. मराठी ग्रामीण साहित्य व ग्रामीण साहित्य चळवळ यांचा परस्पर संबंध स्पष्ट करा.
- प्रश्न क्र. ३ अ) दलित साहित्यातील वेदना, विद्रोह आणि नकार या घटकांची साधारण चर्चा करा. गुण १०
- ब) थोडक्यात उत्तरे लिहा. (कोणतीही दोन) गुण १०
१. दलित आत्मकथनाचे स्वरूप लिहा.
 २. दलित साहित्याची प्रेरणा साधारण लिहा.
 ३. दलित साहित्य आणि दलित चळवळ ह्यातील साम्य सांगा.
- प्रश्न क्र. ४ अ) स्त्रीवादी साहित्याची संकल्पना स्पष्ट करा. गुण १०
- ब) थोडक्यात उत्तरे लिहा. (कोणतीही दोन) गुण १०
१. भारतीय व पाश्चात्य स्त्रीवादाची मीमांसा करा.
 २. मराठी स्त्रीवादी कवितेचे स्वरूप लिहा.
 ३. मराठी स्त्रीवादी आत्मचरित्रांचा आढावा द्या.

प्रश्न क्र. ५ अ) आदिवासी साहित्याचे रूप-स्वरूप साधार लिहा.

गुण १०

ब) थोडक्यात उत्तरे लिहा. (कोणतीही दोन)

गुण १०

१. नवसाहित्याची संकल्पना स्पष्ट करा.

२. नवकवितेबाबत शरच्चंद्र मुक्तिबोध यांनी केलेल्या विवेचनाचा परामर्श घ्या.

३. १९४५ नंतरच्या साहित्याचे वेगळेपण उदाहरणांसह लिहा.

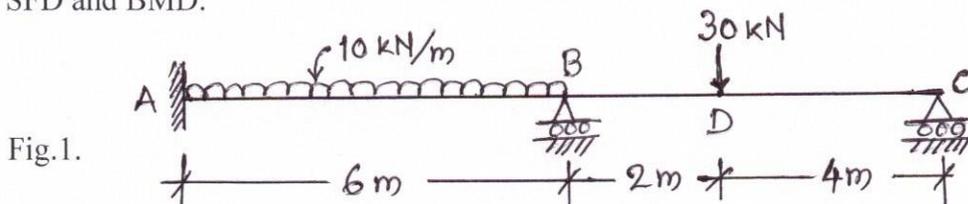
PhD Course Work Exam Paper 3 EXAMINATION - 2022 Marks: 100

Subject: Civil Engineering (Adv. Know. Structural Engg. & Concrete Technology)

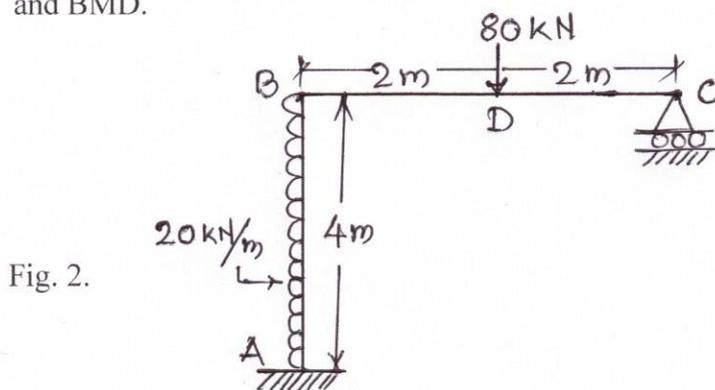
- Notes:** 1. Use of revised IS 456 and IS 1893 is permitted.
 2. Use of scientific calculator is permitted.

Q. 1. Answer **Any One** of the following (Long Answer Question) 20 Marks.

A) Analyse the beam shown in Fig. 1 using stiffness matrix method. Take $EI = \text{constant}$. Draw SFD and BMD. (20)



B) Analyse the frame shown in Fig. 2 using stiffness matrix method. EI is constant. Draw SFD and BMD. (20)



Q. 2. Answer **Any One** of the following (Long Answer Question)

- A)** (a) What are displacement functions in FEM? Construct a polynomial for 4 noded rectangular plate bending element with 3 DOF at each node. (5)
 (b) Explain the criteria for the selection of the displacement functions in FEM. (5)
 (c) Explain how principle of virtual work and minimum potential energy are used to evaluate the stiffness matrix for a finite element. Give mathematical procedure. (10)
- B)** Derive element stiffness matrix for a plane stress four-noded rectangular element in x - y plane. Show that strains are constant within the element. Also show that shape functions satisfy their properties and show their variations. (20)

Q. 3) Answer Any One of the following (Long Answer Question) 20 Marks

- A) What is the purpose of concrete mix design? Design the concrete mix design for M60 grade of concrete using natural sand, 12- and 20-mm coarse aggregates under severe conditions using standard code of practice. What do you understand by yield of concrete? (20)
- B) A fixed ended RC beam of rectangular cross section has to carry a distributed live load of 20 kN/m in addition to its self-weight and a dead load of 25 kN/m. The maximum bending moment and shear force due to earthquake are 60 kNm and 40 kN respectively. Centre to centre span between supports is 6 m. Design the beam Using M20 grade concrete and Fe-415 grade of steel. Provide check for shear and minimum and maximum steel required as IS 13920 for ductility requirement. Show the longitudinal and shear reinforcements. (20)

Q. 4) Answer Any Two of the following (Short Answer Question)

- A) State and explain briefly the various destructive and non-destructive methods of hardened concrete to ensure the quality assurance according to codes of practices. (10)
- B) The two regression equations of the variables x and y are $x = 19.13 - 0.87y$ and $y = 11.64 - 0.50x$. Find a) mean of x , b) mean of y , and c) the correlation coefficient between x and y . (10)
- C) State the different methods of solution of linear and non-linear algebraic equations. Find by Newton-Raphson's method the real root of the following equation correct to five decimal places. (10)
- $$x \log_{10} x - 1.2 = 0$$

Q. 5) Answer Any Two of the following (Short Answer Question)

- A) State and explain factors affecting the mechanical properties of fibre reinforced concrete. Why natural fibres are not used in concrete to improve the mechanical and durability properties? (10)
- B) What is the pozzolanic reactivity and filler effect of pozzolanic material? How these factors improve the properties of normal concrete? Which properties of concrete are improved by addition of pozzolana? Explain how high-performance concrete is obtained using GGBS. (10)
- C) Explain briefly the methodology for measurement of environmental impact for any major civil engineering project. (10)

***** End of Paper*****

Seat No.	
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SLR-CW-72

Examination-2022

Class:- Ph.D. Course work (New w.e.f. 2021)

Subject :- Computer Science

P- III -Advanced Knowledge in Core Domain of Computer Science

Time:- 3 Hrs.

Marks:- 100

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- Ques. 1) Answer Any one of the following (Long Answer Question) 20 Marks
- A) Explain various methods of data cleaning in detail.
 - B) What are the technologies used in data mining? Describe?
- Ques. 2) Answer Any one of the following (Long Answer Question) 20 Marks
- A) What is Morphological parsing? Explain 2-level morphological model with example.
 - B) Explain the role of parser. Discuss the ambiguity arises from the parse tree.
- Ques. 3) Answer any one of the following (Long Answer Question) 20 Marks
- A) How stemming affects the performance of IR systems? Explain.
 - B) Explain the semantically guided model for effective text mining.
- Ques. 4) Answer Any Two of the following (Short Answer Question)
- A) Discuss image enhancement using arithmetic and logical operation. 10 Marks
 - B) Explain the Sampling and quantization utilized in image processing 10 Marks
 - C) What are the fundamental steps performed in digital image processing? Explain 10 Marks
- Ques. 5) Answer Any Two of the following (Short Answer Question)
- A) Challenges of Natural Language Processing 10 Marks
 - B) Histogram Processing 10 Marks
 - C) Basic spatial filtering 10 Marks

Coursework Examination (कोर्सवर्क परीक्षा), 2022

Class: Ph. D. Coursework (New w. e. f. 2021) CBCS (वर्ग: पीएच. डी. कोर्सवर्क (नवीन 2021
पासून लागू) सीबीसीएस)

Subject: Library and Information Science (विषय: ग्रंथालय आणि माहितीशास्त्र)

Paper No. III (पेपर क्रमांक III)

Paper Title: Advanced Knowledge in core domain of Library and Information Science

पेपर शीर्षक: ग्रंथालय आणि माहितीशास्त्र मुख्य क्षेत्रातील प्रगत ज्ञान

Time (वेळ):

Marks (गुण): 100

Ques. 1) Answer any one of the following (Long answer question) 20 Marks

प्रश्न. १) खालीलपैकी कोणत्याही एकाचे उत्तरे द्या (दीर्घोत्तरी प्रश्न)

- A) Enumerate different Reference Management Tools. Explain any one Reference Management Tool with examples.
विविध संदर्भ व्यवस्थापन साधनांची नमूद करून कोणतेही एक संदर्भ व्यवस्थापन साधन उदाहरणांसह स्पष्ट करा.
- B) Explain the Concept of Library Consortia.
लायब्ररी कन्सोशियाची संकल्पना स्पष्ट करा.

Ques. 2) Answer any one of the following (Long answer question) 20 Marks

प्रश्न. २) खालीलपैकी कोणत्याही एकाचे उत्तरे द्या (दीर्घोत्तरी प्रश्न)

- A) Define and discuss the Concepts Motivation and Group dynamics.
प्रेरणा आणि गट गतिशीलता संकल्पनाची व्याख्या सांगून चर्चा करा.
- B) State the Marketing skills and techniques essential for library professionals.
ग्रंथालय व्यावसायिकांना आवश्यक असलेली विपणन कौशल्ये आणि तंत्रे सांगा.

Ques. 3) Answer any one of the following (Long answer question) 20 Marks

प्रश्न. ३) खालीलपैकी कोणत्याही एकाचे उत्तरे द्या (दीर्घोत्तरी प्रश्न)

- A) Discuss in detail objectives, components and development of user education.
उपभोक्ता प्रशिक्षणाची उद्दिष्टे, घटक आणि विकास यावर तपशीलवार चर्चा करा.

- B) What do you mean by Reengineering? Describe importance of reengineering in Library services.

पुनर्अभियांत्रिकी म्हणजे काय? ग्रंथालय सेवांमध्ये पुनर्अभियांत्रिकीचे महत्त्व सांगा.

Ques. 4) Answer any two of the following (Short answer question)

20 Marks

प्रश्न. ४) खालीलपैकी कोणत्याही दोन प्रश्नांची उत्तरे लिहा. (लघुत्तरी प्रश्न)

- A) What is RDBMS? Discuss its advantages.
आर डी बी एमएस म्हणजे काय? त्याच्या फायद्यांची चर्चा करा.
- B) Explain the concept of Six Sigma with examples.
सिक्स सिग्माची संकल्पना उदाहरणांसह स्पष्ट करा.
- C) Explain the importance of Performance Appraisal.
कार्य मूल्यांकनाचे महत्त्व समजावून सांगा.

Ques. 5) Answer any two of the following (Short answer question)

20 Marks

प्रश्न. ५) खालीलपैकी कोणत्याही दोन प्रश्नांची उत्तरे लिहा. (लघुत्तरी प्रश्न)

- A) What is Web 2.0? Explain the importance of Web 2.0 and Library 2.0 in detail.
वेब 2.0 म्हणजे काय? वेब 2.0 आणि लायब्ररी 2.0 चे सविस्तर महत्त्व सांगा.
- B) Write an essay on E-governance.
ई-गव्हर्नन्सवर निबंध लिहा.
- C) What are the different methods of Budgeting? Describe in detail ZBB Method.
अंदाजपत्रकाच्या (अर्थसंकल्पाच्या) वेगवेगळ्या पद्धती कोणकोणत्या आहेत ते सांगून झेड बी बी पद्धतीचे तपशीलवार वर्णन करा.

Examination-2022

PH.D. COURSE WORK QUESTION PAPER

Subject: Advances in Telecommunication

100Marks

Ques.1) Answer Any one of the following 20Marks

- A) Define spectrum sensing. List the energy detection techniques in cognitive radio and explain in detail.
- B) Four received power measurements were taken at distances of 100m, 200m, 1km, and 3km from a transmitter. These measured values are given in following table. It is assumed that the pathloss for these measurements follow log-normal shadowing, Where $d_0 = 100m$. Find
- The minimum mean square error (MMSE), estimate for pathloss exponent, n ;
 - Calculate the standard deviation about the mean value.
 - Estimate the received power at $d = 2km$ using resulting model.
 - Predict the likelihood that the received signal level at 2km will be greater than -60dbm.
 - Predict the percentage of area within a 2km radius cell that receives signal greater than -60dbm.

Ques.2) Answer Any one of the following 20Marks

- A) What aspect of the MIMO model is fundamentally different than conventional transmits scenarios? What is rank a measure of in MIMO systems? How does capacity increase in MIMO system?
- B) What do you understand by 5G simulation methodology with reference to 5G tools for simulation efficiency, technology supported, simulation models categories, user and network key performance indicators and simulation workflow.

Ques.3) Answer Any one of the following

20

- Marks A) What is cooperative communication network? Give merits, demerits and applications. Explain basic techniques of cooperative communication.
- B) Elaborate the problems that Blockchain solves. Explain challenges faced by Blockchain technology. State different characteristics of Blockchain.

Ques.4) Answer Any Two of the following

10 Marks

- Draw and explain 5G millimeter wave channel model.
- How interference management is achieved in 5G and beyond networks.
- Explain cell site power consumption modeling in green communication.

Ques.5) Answer Any Two of the following

10 marks

- Draw and explain cognitive resource manager framework.
- What are the security issues, common vulnerabilities and prevention mechanism in E-business.
- What are the different types of Blockchain. Draw and explain architecture of Blockchain technology.

Ph.D Course Work Exam -2022

Sub: Network Security and Cloud Computing

Marks:100

INSTRUCTIONS

1. Neat diagrams must be drawn whenever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data, if necessary.

Ques. 1) Answer Any **one** of the following

20 Marks

- A) Differentiate an ad hoc network and a cellular network with respect to i) Bandwidth usage ii) Cost effectiveness and Discuss issues in designing a routing protocol for ad hoc wireless networks.
- B) Explain with example Destination Sequenced Distance-Vector Routing Protocol(DSDV) and Discuss the differences in topology reorganization in DSDV and CGSR.

Ques. 2) Answer Any **one** of the following

20 Marks

- A) How does the Hadoop Map reduce data flow work for a word count program(Give an example)and Explain HDFS Name node federation, NFS Gateway, Snapshots, Checkpoints, and Backups?.
- B) Explain general architecture for delivery of IoT Big Data services.

Ques. 3) Answer Any **one** of the following

20 Marks

- A) Explain various implementation levels of Virtualization of CPU, Memory and I/O devices with with example.
- B) Define Aneka? Explain Aneka framework architecture and Use case of resource provisioning under Aneka.

Ques. 4) Answer Any **Two** of the following

- A) Explain threats and attacks with an example. Draw and explain an attack tree analysis for an Internet banking authentication application.

10 Marks

- B) State and explain types of Intrusion Detection System(IDS). A company wants to develop an IDS, How will you design and implement it? Give the detailed solution.

10 Marks

- C) Explain the Investigation Triad? List standard systems analysis steps to be applied when preparing a for forensic investigation case.

10 Marks

Ques. 5) Answer Any **Two** of the following (Short Answer Question)

- A) List and explain the steps involved to understand, clean and prepare your data for building your predictive model with a example and Discuss Methods to treat missing values.

10 Marks

- B) Describe how Apache Hadoop can serve as an IoT data management platform.

10 Marks

- C) List and explain the classification of routing protocols based on the routing information update mechanism

10 Marks

PhD. Course Work Paper-3 Examination-2022

Data Science and Machine Learning

Maximum Marks 100

Q.1	Answer any one of the following	(20 Marks)
A)	Outline methods for addressing the <i>class imbalance problem</i> . Suppose a bank wants to develop a classifier that guards against fraudulent credit card transactions. Illustrate how you can induce a quality classifier based on a large set of nonfraudulent examples and a very small set of fraudulent cases.	
B)	What are intelligent agents. Explain characteristics. Also describe different types of agents.	
Q.2	Answer any one of the following	(20 Marks)
A)	What is pruning? Why is pruning required? With an example describe in detail FP- growth algorithm.	
B)	Define heuristic with example. Explain working mechanism and limitations of hill climbing search.	
Q.3	Answer any one of the following	(20 Marks)
A)	What is backpropagation network. Explain it's architecture. List and explain different factors affecting back propagation algorithm.	
B)	What is linear regression? Explain linear regression model with normally distributed errors. Also describe any two applications of logistic regression.	
Q.4	Answer any two of the following	(10 Marks)
A)	Write a note on Hadoop distributed file system. What are the various types of permissions in Hadoop distributed file system.	
B)	Describe how to predict whether customers will buy a product or not? Explain with respect to decision tree.	
C)	Define constraint satisfaction problem. Illustrate with example how constraint satisfaction problem is formulated as a search problem.	
Q.5.	Answer any two of the following	(10 Marks)
A)	What is Learning. Compare supervised and unsupervised learning. Explain reinforcement learning in detail.	
B)	Explain in detail convolutional neural network.	
C)	Explain in detail association rule mining.	

Paper No.-3 Advanced Knowledge in Core Domain of Civil Engineering Elective
(C) Advanced Knowledge in Environmental Engineering and Water Resources Engineering
(Ph. D. Course) Examination-2022

100 MARKS

- Q 1** *Answer ANY ONE of the following.* *20 marks*
- A** Write a note on Surface water resources mapping and management.
B What is Activated Sludge Process (ASP)?
- Q 2** *Answer ANY ONE of the following.* *20 marks*
- A** Write a detailed note on Seasons in India and its effect on pressure & temperature.
B Explain Oxygen Sag curve.
- Q 3** *Answer ANY ONE of the following.* *20 marks*
- A** What is Hydrological modeling and enlist Branches of hydrology?
B Describe physical chemical and biological processes in water purification.
- Q 4** *Answer ANY TWO of the following.* *20 marks*
- A** Enlist Types of drought.
B Describe Sustainable development.
C Write detailed note on Air Pollutants and its Sources.
- Q 5** *Answer ANY TWO of the following.* *20 marks*
- A** Write a detailed note on Bivariate Frequency Distribution.
B Explain Environmental Impact Assessment (EIA) & Environmental Impact Statement (EIS) What is difference between Environmental Impact statement and assessment?
C Enlist various techniques used for concrete testing for quality assurance.

Electronics Engineering and Electronics & Telecommunication Engineering
Ph.D. Course Work Examination-2022
Course/Paper-3 (Advanced Knowledge in Core domain of Concerned Subjects)
Elective a: Machine Learning

Marks - 100

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- Q1. Answer Any one of the following 20 Marks
- a. What is concept learning? Explain Find S algorithm. What are its key properties?
 - b. With suitable example explain below algorithms –
 - I. version space and candidate
 - II. list then eliminate
 - III. candidate elimination
- Q2. Answer Any one of the following 20 Marks
- a. How information gain attribute can be used for splitting the nodes- explain with suitable example. How to avoid overfitting in decision tree
 - b. How an artificial neuron mimics biological neuron? What are popular activation functions used in artificial neural networks?
- Q3. Answer Any one of the following 20 Marks
- a. Explain shattering a set of instances. What is role of VC dimension in it? How VC dimension is also related to sample complexity?
 - b. Explain locally weighted regression, radial basis functions and case based reasoning
- Q4. Answer Any Two of the following 20 Marks
- a. With suitable example compare similarities and differences in
 - I. supervised and unsupervised learning.
 - II. classification and regression
 - III. linear and non linear regression
 - b. Discuss strengths, limitations and applications of support vector machines
 - c. Discuss various steps in –
 - I. classification task
 - II. clustering task
- Q5. Answer Any Two of the following 20 Marks
- a. With suitable example explain an end to end system for any machine learning application of your choice. Explain each step
 - b. Compare Bayesian model averaging and committee networks
 - c. Explain mixtures of linear regression models

Seat No.	
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Ph.D. Course Work Examination-2022**Recent Trends In Electronics****Ph.D Course Work Question Paper 2022***Course Work Paper 3**100 Marks***Ques.1) Answer Any one of the following (Long Answer Question) 20 Marks**

- A) "An ARM processor core is one of the best alternatives obtainable for embedded system designers to develop microprocessor-based applications." Elaborate the statement citing different libraries and tools available for the development. Compare the SoC and dedicated microprocessor-based system development approaches.
- B) With the help of a neat schematic diagram explain construction and operation of a pSoC based programmable function generator to produce variable frequency/amplitude sine, triangle and square-waveforms.

Ques.2) Answer Any one of the following (Long Answer Question) 20 Marks

- A) How do the Mixed signal sensor SoCs handle distributed intelligence in their sensor elements? Explain with suitable block diagram and flow chart.
- B) Explain the following in the context of Intelligent Electronic Systems used for monitoring and control applications:
- IDE and Development tools,
 - Interrupt subsystem,
 - In system programming.

Ques.3) Answer Any one of the following (Long Answer Question) 20 Marks

- A) "Cypress pSoC family ICs use ARM Cortex M0 microcontroller core and Flash/SRAM, ADC Opamps, DACs, GPIOs and Serial interfaces" Elaborate the statement with block diagram and specifications of any specific pSoC IC.
- B) Explain the concept of Artificial intelligence with suitable examples. What are the algorithms/tools commonly used for this purpose?

Ques.4)AnswerAnyTwoofthefollowing(ShortAnswerQuestion)

- A) Explain the multi-hop routing technique in WSN. How does it help in improving the communication quality? **10Marks**
- B) What are the on-chip resources of the X-bee Pro? What is the operation range of such nodes? **10Marks**
- C) With suitable examples explain Edge enhancement technique in image processing and state its applications. **10Marks**

Ques.5)AnswerAnyTwoofthefollowing(ShortAnswerQuestion)

- A) Explain IoT usage in Smart grid management **10Marks**
- B) Distinguish between Bluetooth and Wi-Fi **10Marks**
- C) What is the expected qualitative and quantitative impact of IIoT on industrial productivity? **10Marks**

Seat No.	
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PH.D COURSE WORK QUESTION PAPER EXAMINATION-2022**PAPER – III ADVANCED KNOWLEDGE IN CORE DOMAIN OF APPLIED GEOLOGY**

Course Work Paper 3

100 Marks

- Ques. 1) Answer Any one of the following (Long Answer Question) 20 Marks
- A) Discuss in detail planning for geological field project.
 - B) Discuss about the significance of rare earth elements (REE) in understanding geochemical evolution of mantle and crust.
- Ques. 2) Answer Any one of the following (Long Answer Question) 20 Marks
- A) Write down in detail mineralogy, structure, chemistry and occurrence of Mica group of minerals.
 - B) What is phase rule? Explain in detail Binary phase diagram.
- Ques. 3) Answer Any one of the following (Long Answer Question) 20 Marks
- A) Explain in detail Mineralisation associated with plate tectonic on the light of metallogenic provinces.
 - B) Discuss in detail Mechanics of faulting.
- Ques. 4) Answer Any Two of the following (Short Answer Question)
- A) Digital Elevation Model (DEM) 10 Marks
 - B) Note on generation of basaltic magma. 10 Marks
 - C) Write brief note on Neo-tectonism. 10 Marks
- Ques. 5) Answer Any Two of the following (Short Answer Question)
- A) Write down procedure for preparation of ore and thin sections of rock. 10 Marks
 - B) Add a note on Paleocurrent analysis. 10 Marks
 - C) stratigraphic correlation and pattern of sedimentation 10 Marks

Seat No.	
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EXAMINATION-2022

Ph.D. Course Work Question Paper**100 Marks****Paper III Applied Research In Environmental Science**

Ques. 1) Answer Any one of the following (Long Answer Question) 20 Marks

- A) Explain the significance of environmental research with its aims and objectives
- B) Explain in detail about the role of Ethics in any research

Ques. 2) Answer Any one of the following (Long Answer Question) 20 Marks

- A) What is EIA? What are the different methods used in EIA?
- B) Why would an organization wish to undertake an environmental audit? Explain

Ques. 3) Answer Any one of the following (Long Answer Question) 20 Marks

- A) Which sampling techniques are used for microflora and microfauna sampling from water?
- B) Explain in detail about the methodology and equipment used for air monitoring especially for PM_{10} and $PM_{2.5}$.

Ques. 4) Answer Any Two of the following (Short Answer Question)

- A) Explain in detail about Electric field and Magnetic field detection 10 Marks
- B) Narrate in detail about measurement of pressure and measurement of Temperature and Pressure 10 Marks
- C) Explain the importance of UAV for environmental monitoring 10 Marks

Ques. 5) Answer Any Two of the following (Short Answer Question)

- A) Explain in detail about equipment used for water sampling 10 Marks
- B) What is automated environmental data collection system? 10 Marks
- C) Which are the different survey techniques? Explain 10 Marks

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No.

EXAMINATION-2022
PhD Course Work Question Paper Pattern:

SLR-CW-49

Theory Exam Paper

Subject: New Advances in Mass Communication for Class PhD Course Work

Course Work Paper 03

100 Marks

Ques. 1) Answer any one of the following (Long Answer Question)

20 Marks

- A) Which editing software's are used in Media Industry? Why these softwares are important?
B) Describe the changing editing trends in Print Media industry?

Ques. 2) Answer any one of the following (Long Answer Question)

20 Marks

- A) Describe the importance of new trends in Audio industry with reference to Storytelling.
B) What is alternative media? How it is different with the contemporary established media?

Ques. 3) Answer any one of the following (Long Answer Question)

20 Marks

- A) How Community Radio is changing the field of audio industry?
B) Describe the role of Social media for public relations in India?

Ques. 4) Answer any Two of the following (Short Answer Question)

20 Marks

- A) Explain the concept of citizen journalism? How it is different with the mainstream media? 10 Marks
B) Elaborate the branding in the digital age using modern techniques. 10 Marks
C) What is Green Journalism? Explain the importance with suitable examples. 10 Marks

Ques. 5) Answer any Two of the following (Short Answer Question)

20 Marks

- A) What are the advancement in the field of journalism with reference to storytelling ideas. 10 Marks
B) What are the challenges and issues are related to the Fake news in India? 10 Marks
C) Explain the role of OTT and AI in Advertisement Techniques. 10 Marks

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प्रश्न. १. खालीलपैकी कोणताही एक प्रश्न सोडवा (दीर्घोत्तरी प्रश्न) गुण-२०

अ) माध्यम उद्योगात संपादनासाठी कोणते सॉफ्टवेअर उपयोगात आणले जातात? हे सॉफ्टवेअर का महत्वाचे आहेत.

ब) मुद्रित माध्यम क्षेत्रातील संपादनाचे बदलते प्रवाह विषद करा.

प्रश्न. २. खालील पैकी कोणताही एक प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न) गुण-२०

अ) स्टोरी टेलिंगच्या संदर्भाने श्राव्य उद्योगातील नवे प्रवाह विषद करा.

ब) पर्यायी माध्यमे म्हणजे काय? सध्याच्या प्रस्थापित माध्यमापेक्षा त्यांचे वेगळेपण काय आहे?

प्रश्न. ३. खालीलपैकी एक प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न) गुण-२०

अ) श्राव्य उद्योग क्षेत्रातील समुदाय रेडिओमध्ये कसे बदल होत आहेत.

ब) भारतातील जनसंपर्क क्षेत्रात समाज माध्यमांची भूमिका विषद करा.

प्रश्न. ४. खालीलपैकी कोणतेही दोन प्रश्न सोडवा. (लघुत्तरी प्रश्न) गुण-२०

अ) नागरिक पत्रकारिता ही संकल्पना काय आहे? मुख्य प्रवाहातील माध्यमांपेक्षा ती कशी वेगळी आहे?

गुण-१०

ब) डिजिटल युगात आधुनिक तंत्रज्ञानाच्या मदतीने ब्रँडिंग करता येते त्याविषयी माहिती द्या.

गुण-१०

क) हरित पत्रकारिता म्हणजे काय? योग्य उदाहरणांसह स्पष्ट करा.

गुण-१०

प्रश्न. ५. खालीलपैकी कोणत्याही दोन प्रश्नांची उत्तरे लिहा. (लघुत्तरी प्रश्न) गुण-२०

अ) स्टोरी टेलिंगच्या कल्पनांबाबत पत्रकारितेच्या क्षेत्रात कोणते नवे बदल घडले आहेत?

गुण-१०

ब) खोट्या बातम्यांच्या संदर्भाने भारतात कोणती आव्हाने आणि समस्या निर्माण झाल्या आहेत?

गुण-१०

क) जाहिरात तंत्राच्या संदर्भाने ओ.टी.टी. आणि कृत्रिम बुद्धिमत्ता (आर्टिफिशिअल इंटेलिजन्स) ची भूमिका विषद करा.

गुण-१०

Ph.D Course Work Examination-2022

Paper- III Industry And Society

Marks - 100

Ph. D Course Work Question Paper

Q. 1) Answer any one of the following (Long Answer Question) 20 Marks

A) Discuss the impact of Industrialization on struggles and changes in Indian Society.

B) Describe gender inequalities at work place with examples.

Q. 2) Answer any one of the following (Long Answer Question) 20 Marks

A) Discuss Weber's concept of Industrial Bureaucracy.

B) Critically examine the changes in domestic division of labour.

Q. 3) Answer any one of the following (Long Answer Question) 20 Marks

A) Write an essay on reality of contemporary Indian industry.

B) Critically examine the effects of Industrialization on community and society

Q. 4) Answer any two of the following (Short Answer Question)

A) Describe the impact of Industrialization on family and marriage. 10 Marks

B) Give a historical account of feminization of work. 10 Marks

C) State the social responsibilities of corporate sector with special reference to the Indian society. 10 Marks

Q. 5) Answer any two of the following (Short Answer Question)

A) Write a note on women entrepreneurship. 10 Marks

B) Elaborate Karl Marx's 'theory of class struggle'. 10 Marks

C) Explain your views on unpaid work of women. 10 Marks

Seat
No.

Ph.D Course Work Examination-2022

Paper- III Industry And Society

SLR-CW-41

पीएच. डी कोर्स वर्क प्रश्नपत्रिका

MARKS-100

- प्र. १) खालीलपैकी कोणत्याही एका प्रश्नांचे उत्तर द्या. (दीर्घ प्रश्न) २० गुण
अ) औद्योगीकरणाचा संघर्ष आणि भारतीय समाजातील बदलांवर झालेल्या परिणामांची चर्चा करा
ब) कामाच्या ठिकाणी लैंगिक असमानतेचे उदाहरणांसह वर्णन करा.
- प्र. २) खालीलपैकी कोणत्याही एका प्रश्नांचे उत्तर द्या. (दीर्घ प्रश्न) २० गुण
अ) वेबरच्या औद्योगिक नोकरशाहीच्या संकल्पनेची चर्चा करा.
ब) स्त्रियांच्या घरगुती कामाबद्दल तुमचे मत स्पष्ट करा.
- प्र. ३) खालीलपैकी कोणत्याही एका प्रश्नांचे उत्तर द्या. (दीर्घ प्रश्न) २० गुण
अ) समकालीन भारतीय उद्योगाच्या वास्तवावर एक निबंध लिहा.
ब) औद्योगिकीकरणाचे समाजावर होणारे गंभीर परिणाम तपासा.
- प्र. ४) खालीलपैकी कोणत्याही दोनची उत्तरे द्या. (लघु प्रश्न)
अ) औद्योगिकीकरणाचा कुटुंब आणि विवाह संस्थांवर झालेल्या परिणामांचे वर्णन करा. १० गुण
ब) कामाच्या स्त्रीकरणाची ऐतिहासिक माहिती द्या. १० गुण
क) भारतीय समाजाच्या संदर्भात कॉर्पोरेट क्षेत्राच्या सामाजिक जबाबदाऱ्या सांगा. १० गुण
- प्र. ५) खालीलपैकी कोणत्याही दोनची उत्तरे द्या. (लघु प्रश्न)
अ) महिला उद्योजकतेवर एक टीप लिहा. १० गुण
ब) कार्ल मार्क्सचा वर्गसंघर्षाचा सिद्धांत विशद करा. १० गुण
क) घरगुती श्रम विभागणीतील बदलांचे परीक्षण करा. १० गुण
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Ph.D Course Work Examination-2022

प्रश्नपत्र-३ हिंदी साहित्य

MARKS-100

प्रश्न क्र.१. निम्नलिखित में से किन्हीं एक प्रश्न का उत्तर लिखिए।

(२० गुण)

- अ) 'रश्मि' के आधार पर कर्ण का चरित्र- चित्रण कीजिए।
ब) नाटक के तत्वों के आधार पर 'मुआवजे' की समीक्षा कीजिए।

प्रश्न क्र.२. निम्नलिखित में से किन्हीं एक प्रश्न का उत्तर लिखिए।

(२० गुण)

- अ) 'सुदामा पाण्डे का प्रजातंत्र' में चित्रित समस्याओं का विवेचन कीजिए।
ब) हिंदी आत्मकथा के विकास एवं विशेषताएं लिखिए।

प्रश्न क्र.३. निम्नलिखित प्रश्नों में से किन्हीं एक प्रश्न का उत्तर लिखिए।

(२० गुण)

- अ) उपन्यास के तत्वों के आधार पर 'यमदीप' की समीक्षा कीजिए।
ब) 'आधे अधूरे' नाटक स्त्री-पुरुष के बीच के लगाव और तनाव का दस्तावेज है, स्पष्ट कीजिए।

प्रश्न क्र.४. निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए।

(२० गुण)

- अ) हिंदी कविता के विकास को स्पष्ट कीजिए।
ब) हिंदी आलोचना का विकासक्रम लिखिए।
क) एकांकी के तत्वों का विश्लेषण कीजिए।

प्रश्न क्र.५. निम्नलिखित में से किन्हीं दो प्रश्नों का उत्तर लिखिए।

(२० गुण)

- अ) 'रश्मि' के आधार पर कुंती का चरित्र - चित्रण कीजिए।
ब) तुलनात्मक साहित्य के स्वरूप को स्पष्ट कीजिए।
क) डायरी साहित्य के तत्वों का विवेचन कीजिए।

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Ph.D.Course Work Examination,2022
MECHANICAL ENGINEERING(Paper-III) (old)
Modern Topics in Mechanical Engineering from Performance
Improvement Perspective

Day and Date:

Total Marks:100 Time:

1. A) Discuss in details the Product development cycle. **10**
 B) Attempt **any two**: **10**
 - a) Explain the Steps of Quantity Function Deployment
 - b) What is formulation of product specification? Discuss the case
 - c) Compare the Quantity Function Deployment with other tools

 2. A) Write the case study on optimization design of mechanical system **10**
 B) Attempt **any two**: **10**
 - a) What is mean by Robust Design? Explain in detail the Portfolio design
 - b) Which are the stakeholders of **Design Optimization** process.
 - c) Brief on economics of quality

 3. A) How to ensure quality planning for manufacturing and what is process capability. **10**
 B) Attempt **any two**: **10**
 - a) Describe process control & its techniques.
 - b) Explain statistical process control techniques.
 - c) What is the process of disposal of rejected products?

 4. A) Write on ISO 9000 series of standards **10**
 B) Attempt **any two**: **10**
 - a) Describe the Implementation process of ISO 9001: 2008.
 - b) How to ensure the continual improvement by ISO 9001.
 - a) Write Difference between TQM and Six Sigma?

 5. A) Explain in detail the Failure mode and effect analysis **10**
 B) Attempt **any two**: **10**
 - a) Explain the Six Sigma roadmap
 - b) Describe in detail the standard deviation DMAIC model of Six Sigma.
 - c) Which are various Six Sigma tools?
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Ph. D. Course Work Examination-2022
Subject Geography
Paper-III (Opt. Paper-III) (old)
Recent Trends in Agricultural Geography

Day & Date
Time:3 hours

Total Marks-100

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Instruction 1) All question are compulsory
2) All Question carry equal marks

- Q.1A) Explain scope of agricultural geography. 10
B) Answer any two of the following questions. 10
1) Explain regional approach.
2) Describe nature of agricultural geography.
3) Discuss the Southwest Asian Genecentre.
- Q.2A) Explain nonphysical determinants of agricultural pattern. 10
B) Answer any two of the following questions. 10
1) Describe African genecentre of agriculture.
2) Explain effect of climate on agriculture.
3) Explain concept of agricultural efficiency.
- Q.3A) Explain world distribution of extensive agriculture and give it's characteristics. 10
B) Answer any two of the following questions. 10
1) Give the characteristics of intensive farming.
2) Explain concept of cropping pattern.
3) Explain concept of crop diversification.
- Q.4A) Explain Janasson's model of agricultural landuse. 10
B) Answer any two of the following questions. 10
1) Give the techniques to determine agricultural productivity.
2) Explain concept of crop combination.
3) Give the problems of agriculture in India.
- Q.5 A) Explain type of sampling. 10
B) Answer any two of the following questions. 10
1) Explain zone of agricultural landuse of Von Thunen's model.
2) Define secondary data and give it's sources.
3) Give the methods of primary data collection.

Ph.D. Course Work Examination-2022
ECONOMICS (Old)
Paper – III (Compulsory) : Modern Theories in Economics
Total Marks : 100

Instructions : 1) Attempt **all** questions.
2) Figures to the **right** indicate **full** marks

- Q.1 A) Explain the Chamberlain's approaches to equilibrium of Monopolistic market : 10
B) Write short notes on **any two** of the following : 10
i) Golden rule of accumulation.
ii) kinked demand curve.
iii) Flexible Exchange rates.
- Q.2 A) Discuss the Baumol's Sales Maximization Hypothesis 10
B) Write short notes on **any two** of the following : 10
i) Fiscal Policy.
ii) Monopolistic competition.
iii) Foreign trade multiplier
- Q.3 A) Explain the role of IS-LM technique in analysis of an open economy. 10
B) Write short notes on **any two** of the following : 10
i) Embodied technical progress
ii) Perfect Capital Mobility.
iii) Workable competition.
- Q.4 A) Explain the Solow Growth Model mathematically . 10
B) Write short notes on **any two** of the following : 10
i) . Non collusive oligopoly
ii) Need of Monetary Policy.
iii) Fixed exchange Rates.
- Q.5 A) Recent developments in Bain's Limit Pricing Theory. 10
B) Write short notes on **any two** of the following: 10
i) Balance of payments .
ii) Endogenous growth.
iii) Satisfying behavior of the firm.

Ph.D Course Work Examination-2022

Ph.D.Course Work Question paper (Old)

अभ्यासपत्रिका: ३ (अ) (ऐच्छिक)

विषय: मध्ययुगीन मराठी साहित्य संशोधन

गुण-१००

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सूचना: सर्व प्रश्न आवश्यक आहेत.

प्रश्न क्र. १.

अ) मध्ययुगीन मराठी साहित्य निर्मितीची पार्श्वभूमी विशद करा. १० गुण

ब) लघुतरी प्रश्न (कोणतेही दोन) १० गुण

१. पंडिती वाङ्मयाची शैली

२. सभासदाची बखर

३. पाठचिकित्सा

प्रश्न क्र. २.

अ) संत साहित्याची सामाजिक फलश्रुती स्पष्ट करा.

१० गुण

ब) लघुतरी प्रश्न (कोणतेही दोन) १० गुण

१. 'नलदमयंती स्वयंवर' मधील स्वभावचित्रे

२. मराठी राजवटीतील पत्ररूप गद्याचे महत्त्व

३. कीर्तन

प्रश्न क्र. ३.

अ) बखर वाङ्मयाच्या अभ्यासाच्या दिशा स्पष्ट करा.

१० गुण

ब) लघुतरी प्रश्न (कोणतेही दोन) १० गुण

१. संत चोखामेळा यांच्या अभंगातील विद्रोह

२. वीरशैव वाङ्मयातील आशय

३. कलगीतुरा

प्रश्न क्र. ४.

अ) मध्ययुगीन वाङ्मयाच्या रूपबंधाचे स्वरूप विशद करा. १० गुण

ब) लघुतरी प्रश्न (कोणतेही दोन) १० गुण

१. संत जनाबाईंच्या अभंगातील भावजाणीव

२. रामजोशी

३. स्थलवर्णन

प्रश्न क्र. ५.

अ) शाहिरी वाङ्मयाचे योगदान विशद करा. १० गुण

ब) लघुतरी प्रश्न (कोणतेही दोन) १० गुण

१. मध्ययुगीन मराठी मुस्लिम वाङ्मयाचे वेगळेपण

२. धर्म आणि साहित्य

३. नागेश संप्रदाय

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Ph.D Course Work Examination-2022

SLR-CW-34

Course Work Paper-III

Advanced Knowledge in Core Domain of Economics

Marks-100

Ques. 1) Answer Any one of the following (Long Answer Question)	20 Marks
A) Describe the financial sector reforms in India during post globalization period.	
B) State the importance of Micro Finance and explain the problems of micro-financing in India.	
Ques. 2) Answer Any one of the following (Long Answer Question)	20 Marks
A) Explain in detail the criteria for public investment.	
B) What is Dual economy? Explain the Fei-Ranis Model of Economic development.	
Ques. 3) Answer Any one of the following (Long Answer Question)	20 Marks
A) State the problem and prospects of Agro-processing industries in India.	
B) Critically examine the labour welfare practices in India	
Ques. 4) Answer Any Two of the following (Short Answer Question)	
A) Describe Co-operative credit system in India	10 Marks
B) Explain the Role of agriculture in Economic development	10 Marks
C) State the role of NABARD in agriculture finance	10 Marks
Ques. 5) Answer Any Two of the following (Short Answer Question)	
A) What are the features of labour market in developing countries	10 Marks
B) Describe Pros and cons of contract farming	10 Marks
C) Evaluate the Boserup Model of agricultural development	10 Marks

- प्रश्न १. खालीलपैकी कोणतेही एक प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न) गुण-२०
- अ) जागतिकीकरणानंतर भारतीय वित्त क्षेत्रामध्ये झालेल्या सुधारणांची चर्चा करा.
- ब) सुक्ष्म वित्तसंस्थेचे महत्त्व विषय करुन सुक्ष्म वित्ताचे समस्यांचे स्पष्टीकरण लिहा.
- प्रश्न २. खालीलपैकी कोणतेही एक प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न) गुण-२०
- अ) सार्वजनिक गुंतवणुकीच्या निकषांचे स्पष्टीकरण लिहा.
- ब) वि.अर्थव्यवस्था म्हणजे काय? फे-रेनिस यांचे विकास प्रतिमान स्पष्ट करा.
- प्रश्न ३. खालीलपैकी कोणतेही एक प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न) गुण-२०
- अ) भारतातील कृषी प्रक्रिया उद्योगांचे समस्या सांगुन त्याचे भवितव्य सांगा.
- ब) भारतातील श्रमिक कल्याणपध्दतीचे टिकात्मक परिक्षण करा.
- प्रश्न ४. खालीलपैकी कोणतेही दोन प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न) गुण-२०
- अ) भारतातील सहकार वित्त व्यवस्थेचे वर्णन लिहा.
- ब) कृषीक्षेत्राचे आर्थिक विकासातील भुमिका सांगा.
- क) नाबार्डचे कृषिवित्तमधील भुमिका सांगा.
- प्रश्न ५. खालीलपैकी कोणतेही दोन प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न) गुण-२०
- अ) विकसनशील देशातील श्रम बाजाराचे वैशिष्ट्ये काय आहेत?
- ब) करारशेतीचे फायदे आणि तोटे सांगा.
- क) बोसेरप यांचे कृषि विकासाच्या प्रतिमानाचे मूल्यमापन करा.

Ph.D Course Work Examination- 2022

Ancient Indian History, Culture & Archaeology

Paper- III RESEARCH IN INDIAN ART AND ARCHITECTURE

Total Marks: 100

Ques. 1) Answer Any one of the following.

- A) Write a note on the salient features of the Harappan Architecture.
- B) Write an essay on the Rock art of Bhimbetka.

प्रश्न १) खालीलपैकी कोणत्याही एका प्रश्नाचे उत्तर लिहा.

- अ) हडप्पा स्थापत्याच्या ठळक वैशिष्ट्यांवर एक टिपण लिहा.
- आ) भीमबेटकाच्या शैलकलेवर निबंध लिहा.

Ques. 2) Answer Any one of the following.

- A) Write a note on the prominent features of the Buddhist rock-cut caves of Maharashtra.
- B) Describe the emergence and development of the temple architecture during the Gupta period.

प्रश्न २) खालीलपैकी कोणत्याही एका प्रश्नाचे उत्तर लिहा.

- अ) महाराष्ट्रातील बौद्ध लेणींच्या प्रमुख वैशिष्ट्यांवर एक टिपण लिहा.
- आ) गुप्त कालखंडातील मंदिर स्थापत्याच्या उदय आणि विकासाचे वर्णन करा.

Ques. 3) Answer Any one of the following.

- A) Write a note on the prominent features of the Hindu rock-cut caves at Ellora.
- B) Describe the important features of the temple architecture of Maharashtra.

प्रश्न ३) खालीलपैकी कोणत्याही एका प्रश्नाचे उत्तर लिहा.

- अ) वेरूळ येथील हिंदू लेणींच्या प्रमुख वैशिष्ट्यांवर एक टिपण लिहा.
- आ) महाराष्ट्रातील मंदिर स्थापत्याच्या प्रमुख वैशिष्ट्यांचे वर्णन करा.

Ques. 4) Answer Any Two of the following.

- A) Sanchi stupa
- B) Monolithic temples (rathas) at Mahabalipuram

C) Bhumija style of temple architecture

प्रश्न ४) खालीलपैकी कोणत्याही दोघांचे उत्तर लिहा.

अ) सांची स्तूप

आ) महाबलिपूरम येथील एकाशम मंदिरे (रथ)

इ) मंदिर स्थापत्याची भूमिज शैली

Ques. 5) Answer Any Two of the following.

A) Gandhara school of Art

B) Elephanta caves

C) Mauryan Pillars

प्रश्न ५) खालीलपैकी कोणत्याही दोघांचे उत्तर लिहा.

अ) गांधार कला केंद्र

आ) एलिफंटा लेणी

इ) मौर्यकालीन स्तंभ

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Examination-2022

**Ph.D. Course Work Question Paper
Recent Trends in Rural Development**

Course Work Paper 3

**100 Marks
20 Marks**

Ques. 1) Answer Any one of the following (Long Answer Question)

- A) Explain the importance and need of rural infrastructure
- B) What are the challenges before rural non-farm sector in India? Suggest the appropriate measures to face it.

Ques. 2) Answer Any one of the following (Long Answer Question) 20 Marks

- A) What are the causes of rural poverty? Suggest the effective measures to reduce rural poverty.
- B) Write a note on Sustainable Agriculture and rural livelihood?

Ques. 3) Answer Any one of the following (Long Answer Question) 20 Marks

- A) Explain the objectives and progress of Nirmal Gram Yojana.
- B) Explain the initiatives taken by government of India to diversify of rural population

Ques. 4) Answer Any Two of the following (Short Answer Question)

- A) State the impact of Globalization on rural livelihood **10 Marks**
- B) Write a detailed note on Mission Antyodaya **10 Marks**
- C) Explain the sectoral structure of rural employment. **10 Marks**

Ques. 5) Answer Any Two of the following (Short Answer Question)

- A) What are the major problems of rural transportation? **10 Marks**
- B) Write a note on Gender dimension of rural labour **10 Marks**
- C) Explain the different issues of diversification of rural livelihood **10 Marks**

मराठी भाषांतर

प्रश्न १. खालीलपैकी कोणतेही एक प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न)

२० गुण

- अ) ग्रामीण सुविधांचे महत्व व गरज विश्लेषण करा.
ब) भारतातील बिगर शेती क्षेत्रासमोरील आव्हाने सांगून त्यावर उपाय सुचवा.

प्रश्न २. खालीलपैकी कोणतेही एक प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न)

२० गुण

- अ) ग्रामीण दारिद्र्याची कारणे कोणती? ग्रामीण दारिद्र्य कमी करणेसाठी परिणामकारक उपास सुचवा.
ब) शाश्वत शेती आणि ग्रामीण जीवनमान यावर टिपण लिहा.

प्रश्न ३. खालीलपैकी कोणतेही एक प्रश्न सोडवा. (दीर्घोत्तरी प्रश्न)

२० गुण

- अ) निर्मल ग्राम योजनेची उद्दिष्ट्ये व प्रगती स्पष्ट करा.
ब) भारतातील ग्रामीण लोकसंख्येच्या विविधकरणासंबंधी भारत सरकारनी कोणती भूमिका घेतली आहे.

प्रश्न ४. खालीलपैकी कोणतेही दोन प्रश्न सोडवा. (प्रत्येकी १० गुण)

२० गुण

- अ) जागतिकीकरणाचा ग्रामीण जीवनमानावर झालेला परिणाम स्पष्ट करा.
ब) अंतोदय मिशनचे सविस्तर विश्लेषण करा.
क) ग्रामीण बेरोजगाराचे विभागवार रचना स्पष्ट करा.

प्रश्न ५. खालीलपैकी कोणतेही दोन प्रश्न सोडवा (प्रत्येकी १० गुण)

२० गुण

- अ) ग्रामीण वाहतुकीकरणाचे प्रमुख समस्या सांगा.
ब) ग्रामीण मजुरांचे लिंग स्थित्यंतरे स्पष्ट करा.
क) ग्रामीण जीवनमानाचे विविधीकरणासंबंधीच्या प्रमुख समस्यांचे विश्लेषण करा.

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Ph.D Course Work Examination-2022

SLR-CW-61

**Subject- Geography
Paper III: Recent Trends in Geography**

Marks - 100

- Q 1. Answer any one of the following (Long Answer Question) 20 Marks**
- A. Critically explain the Von Thunens Model of Agricultural landuse.
 - B. Define Economic Geography. Describe the different approaches to the study of Economic Geography.
- Q 2. Answer any one of the following (Long Answer Question) 20 Marks**
- A. Evaluate the Alfred Wegeners continental drift theory.
 - B. Explain different agricultural determinants with examples.
- Q 3. Answer any one of the following (Long Answer Question) 20 Marks**
- A. Describe tourism planning and policies in India.
 - B. Explain the different techniques of population data analysis.
- Q 4. Answer any two of the following (Short Answer Question)**
- A) Explain the types of tourism. **10 Marks**
 - B) Evaluate causes and effects of population growth in India **10 Marks**
 - C) Describe the sources of population data. **10 Marks**
- Q 5. Answer any two of the following (Short Answer Question)**
- A) Explain significance of agricultural geography. **10 Marks**
 - B) Classify the economic activities and explain primary economic activity. **10 Marks**
 - C) Explain Earthquakes as a natural disaster. **10 Marks**

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Examination-2022

Ph.D.Course Work Course work paper-3

SLR-CW-46

FAMILY AND CHILD DEVELOPMENT

Marks - 100

Ques. 1) Answer Any one of the following (Long Answer Question) 20 Marks

- A) Discuss the Changing trends in the family and their Inter-relationship in the society,
- B) Write a detail note on Problems of Youth and the role of National Youth Policy

Ques. 2) Answer Any one of the following (Long Answer Question) 20 Marks

- A) Describe the concepts of women empowerment and gender equity
- B) Elaborate the Policies and programmes for Women Empowerment and Development

Ques. 3) Answer Any one of the following (Long Answer Question) 20 Marks

- A) What is child development, discuss the Concepts and Stages of child development
- B) Highlight the actions taken by the government and NGOS working for children for protecting the Child Rights

Ques. 4) Answer Any Two of the following (Short Answer Question)

- A) Application of Social work Interventions strategies in Parenting 10 Marks
- B) Agencies working for Human Rights at National and International Level. 10 Marks
- C) Programmes for Person with Disabilities 10 Marks

Ques. 5) Answer Any Two of the following (Short Answer Question)

- A) Social Work Intervention with Elderly 10 Marks
- B) Issues and Concerns related to LGBTQA communities 10 Marks
- C). Social Work Intervention with Persons with Disabilities 10 Marks

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SLR-CW-44

Ph.D Course Work Examination 2022

Subject- Psychology

Paper- Advanced Knowledge in Core Domain of Psychology

Course work Paper 3

100 Marks

- Ques. 1) Answer Any one of the following (Long Answer Question) 20**
- A) Describe in details the causal factors of psychopathology.
 - B) Explain in details the personality disorders.
- Ques. 2) Answer Any one of the following (Long Answer Question) 20**
- A) What is counselling? Explain the legal and ethical issues in counselling.
 - B) Explain in details the eating disorder.
- Ques. 3) Answer Any one of the following (Long Answer Question) 20**
- A) What are the characteristic of Schizophrenia? Describe the diagnostic criteria of Schizophrenia.
 - B) Discuss in details the cognitive behaviour therapy.
- Ques. 4) Answer Any Two of the following (Short Answer Question)**
- A) Explain the definition and nature of social psychology. 10
 - B) What are goals of counselling. 10
 - C) Explain the types of anxiety disorders. 10
- Ques. 5) Answer Any Two of the following (Short Answer Question)**
- A) State the Eysenck's model of personality 10
 - B) What are the factors that affecting on attitude formation? 10
 - C) Explain the coping strategies of stress. 10

संच - ब

पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ सोलापूर

पीएच.डी कोर्स वर्क परीक्षा २०२२

विषय - मानसशास्त्र

पीएच.डी कोर्स वर्क पेपर नं .३

गुण -१००

प्रश्न १. खालीलपैकी कोणत्याही एका प्रश्नाचे उत्तर लिहा.

२०

अ) अपसामान्य (विकृत) वर्तनाच्या कारण घटकांचे सविस्तर वर्णन करा .

ब) व्यक्तिमत्व विकृती सविस्तर स्पष्ट करा .

प्रश्न २ . खालीलपैकी कोणत्याही एका प्रश्नाचे उत्तर लिहा.

२०

अ) समुपदेशन म्हणजे काय ? समुपदेशनातील न्यायिक व नैतिक समस्या स्पष्ट करा .

ब) खाण्याची (खाण्याशीसंबंधित) विकृती सविस्तर स्पष्ट करा .

प्रश्न ३ . खालीलपैकी कोणत्याही एका प्रश्नाचे उत्तर लिहा.

२०

अ) छिन्नमनस्कतेची वैशिष्ट्ये कोणती? छिन्नमनस्कतेच्या निदनात्मक निकषांचे वर्णन करा.

ब) बोधात्मक वर्तन उपचार पद्धती सविस्तर स्पष्ट करा.

प्रश्न ४ . खालीलपैकी कोणत्याही दोन प्रश्नांची उत्तरे लिहा.

अ) सामाजिक मानसशास्त्राच्या व्याख्या आणि स्वरूप स्पष्ट करा.

१०

ब) समुपदेशनाची ध्येये कोणती आहेत ?

१०

क) चिंता विकृतीचे प्रकार स्पष्ट करा .

१०

प्रश्न ५ . खालीलपैकी कोणत्याही दोन प्रश्नांची उत्तरे लिहा.

अ) व्यक्तिमत्व विषयक आयझेन्क यांचे प्रारूप सांगा .

१०

ब) अभिवृत्तीच्या निर्मिती वर परिणाम करणारे घटक कोणते आहेत ?

१०

क) ताणाची साधक प्रतीयोजन कौशल्य स्पष्ट करा .

१०

Ph.D Course Work Examination-2022**Sub - Political Science****Paper -Advanced Knowledge in Core Domain of Political Science.****Class - Ph.D. course work****Marks -100**

Q.1) Answer anyone of the following 20 Marks

A) Write the characteristic of Liberal Democracy.

B) Explain the meaning of New Public Administration and write the characteristics.

प्रश्न 1)खालीलपैकी एका प्रश्नाचे उत्तर लिहा. 20 गुण

अ)उदारमतवादी लोकशाहीची लक्षणे लिहा .

ब)नव लोक प्रशासनाचा अर्थ सांगून वैशिष्ट्ये लिहा.

Q.2) Answer anyone of the following 20 Marks

A) Discuss the influence of caste in Indian Politics.

B) What is comparative Politics? Write the scope.

प्रश्न 2)खालीलपैकी एका प्रश्नाचे उत्तर लिहा. 20 गुण

अ)भारताच्या राजकारणातील जातीच्या प्रभावाची चर्चा करा.

ब)तुलनात्मक राजकारण म्हणजे काय? व्याप्ती लिहा.

Q.3) Answer anyone of the following. 20Marks

A) Explain the determinants of India's foreign policy.

B) Explain the views of Dr. B.R. Ambedkar on Social justice.

प्रश्न 3)खालीलपैकी एका प्रश्नाचे उत्तर लिहा. 20 गुण

अ)भारताच्या परराष्ट्र धोरणाचे निर्धारक घटक स्पष्ट करा.

ब)डॉ.बी .आर. आंबेडकर यांचे सामाजिक न्यायाचे विचार स्पष्ट करा.

Q.4) Answer any two of the following.

- A) Explain the relationship between liberty and equality 10Marks
- B) Discuss the Directive Principles in Indian Constitution. 10Marks
- C) Briefly describe the changing nature of International Politics in the post cold war. 10Marks

प्रश्न 4) खालीलपैकी कोणतीही दोन प्रश्नांची उत्तरे लिहा.

- अ) स्वातंत्र्य व समतेचा संबंध स्पष्ट करा. 10 गुण
- ब) भारतीय राज्यघटनेतील मार्गदर्शक तत्त्वावर चर्चा करा. 10 गुण
- क) शीत युद्धोत्तर आंतरराष्ट्रीय राजकारणाच्या बदलत्या स्वरूपाचे थोडक्यात वर्णन करा. 10 गुण

Q.5) Answer any two of the following.

- A) Explain Lokmanya Tilak's views on Swaraj. 10 Marks
- B) Write the nature of Comparative Politics. 10Marks
- C) Explain the concept of Social Justice. 10Marks

प्रश्न 5) खालीलपैकी कोणत्याही दोन प्रश्नांची उत्तरे लिहा.

- अ) लोकमान्य टिळकांचे स्वराज्यासंदर्भात विचार स्पष्ट करा. 10 गुण
- ब) तुलनात्मक राजकारणाचे स्वरूप लिहा. 10 गुण
- क) सामाजिक न्यायाची संकल्पना विशद करा. 10 गुण

Ph.D Course Work Examination-2022**Paper-III: PRAKRIT COURSE WORK****ADVANCED KNOWLEDGE IN CORE DOMAIN OF PRAKRIT**

- Instructions :**
- 3) All questions are compulsory.
 - 4) Figures to the right indicate full marks.

Marks - 100

Ques.1 Answer in brief anyone of the following.

20
Marks

दीर्घोत्तरी प्रश्न (कोणताही एक).

A) Comment with special interpretation on the book, "Antagad Dasao".

अंतगडदसाओतील विशेष स्पष्टीकरण करा.

B) Discus in detail on the great diamond "Mhabandh" in the book, "Digambar Agam".

दिगंबर आगम ग्रंथातील श्रेष्ठ रत्न महाबंधाची सविस्तर चर्चा करा.

Ques.2 Answer in brief anyone of the following.

20
Marks

दीर्घोत्तरी प्रश्न (कोणताही एक).

A) Write down in detail about a great book, "Panchastikay".

"पंचास्तिकाय" या एक श्रेष्ठ ग्रंथाची सविस्तर माहिती लिहा.

B) Write down on "Acharang Agam" as one of the greatest literature.

आचारांग एक श्रेष्ठ आगम साहित्य यावर निबंध लिहा.

Ques.3 Answer Any one of the following. (Long Answer)

20
Marks

दीर्घोत्तरी प्रश्न (कोणताही एक).

A) Give an introduction of Prakrit Stories from "Vyavhar Bhashya and Brahatkalp".

व्यवहार भाष्य आणि बृहत् कल्पातील प्राकृत कथांचा परिचय द्या.

B) Differentiate the stories according to Dhavalkar Veersenacharya.

धवलाकार वीरसेनाचार्यांच्या मते कथांचे भेद स्पष्ट करा.

Ques.4 Answer Any two of the following. (Short Answer)

20
Marks

थोडक्यात उत्तरे लिहा (कोणतेही दोन).

A) Glimpse culture in Vasudev hindi.

वासुदेव हिंडीतील संस्कृती दर्शन.

B) Theme of Durtakhyan.

धुर्ताख्यानाचा विषय.

C) Hero & heroine in पउमतरियंम.

पउमतरियंमचे नायक -नायिका.

Ques.5 Answer Any two of the following. (Short Answer)

20
Marks

थोडक्यात उत्तरे लिहा (कोणतेही दोन).

A) Give any five symptoms of सदृक.

सदृकाची कोणतीही पाच लक्षणे.

B) Theme of Kummaputha Cariyam.

कुम्मापुजचरियंची विषयवस्तू.

C) Write a essay on "खंडकाव्य".

खंडकाव्यावर निबंध लिहा.

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SLR-CW-24

Kannada Ph.D Course work (New) Exam-2022
(Advanced Knowledge in Core Domain of Kannada)

PAPER-3

Hours : 03

Total Marks : 100

- 1) ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಬೇಕಾದ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಿರಿ.
 - A) ಹಳಗನ್ನಡ ಸಾಹಿತ್ಯದ ಸ್ವರೂಪ ಲಕ್ಷಣಗಳಾವುವು ವಿವರಿಸಿರಿ. 20
 - B) ರತ್ನತ್ರಯರು ಹಳಗನ್ನಡ ಸಾಹಿತ್ಯಕ್ಕೆ ಕೊಟ್ಟ ಕೊಡುಗೆಯನ್ನು ವಿವರಿಸಿರಿ. 20
- 2) ಈ ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಬೇಕಾದ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಿರಿ.
 - A) ನಡುಗನ್ನಡ ಸಾಹಿತ್ಯದ ರೂಪಗಳಾವುವು ವಿವರಿಸಿರಿ. 20
 - B) ಹೊಸಗನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರೇರಣೆ-ಧೋರಣೆಗಳಾವುವು ವಿಶ್ಲೇಷಿಸಿರಿ. 20
- 3) ಈ ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಬೇಕಾದ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಿರಿ.
 - A) ಕಾವ್ಯ ಎಂದರೇನು? ವಿವಿಧ ಅಲಂಕಾರಿಕರ ವ್ಯಾಖ್ಯೆಗಳ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಚರ್ಚಿಸಿರಿ. 20
 - B) ಲಾಂಜಿನಸ್‌ನ ಮಹೋನ್ನತಿ ಸಿದ್ಧಾಂತವನ್ನು ವಿಶ್ಲೇಷಿಸಿರಿ. 20
- 4) ಈ ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಬೇಕಾದ ಎರಡಕ್ಕೆ ಸಂಕ್ಷಿಪ್ತವಾಗಿ ಉತ್ತರಿಸಿರಿ.
 - A) ಭಾಷೆ ಎಂದರೇನು? ವಿವಿಧ ವಿದ್ವಾಂಸರ ವ್ಯಾಖ್ಯೆಗಳ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಚರ್ಚಿಸಿರಿ. 10
 - B) ಕನ್ನಡದ ಅಸಾಧಾರಣ ಲಕ್ಷಣಗಳಾವುವು ಸಂಕ್ಷಿಪ್ತವಾಗಿ ವಿವರಿಸಿರಿ. 10
 - C) ಪ್ರಮುಖ ಕನ್ನಡ ಛಂದೋಗ್ರಂಥಗಳನ್ನು ಅವಲೋಕಿಸಿರಿ. 10
- 5) ಈ ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಬೇಕಾದ ಎರಡಕ್ಕೆ ಸಂಕ್ಷಿಪ್ತವಾಗಿ ಉತ್ತರಿಸಿರಿ.
 - A) ಸಂಸ್ಕೃತಿ ಎಂದರೇನು? ವ್ಯಾಖ್ಯಾನಿಸಿರಿ. 10
 - B) ಜಾನಪದ ಎಂದರೇನು? ವಿವಿಧ ವಿದ್ವಾಂಸರ ವ್ಯಾಖ್ಯೆಗಳ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಚರ್ಚಿಸಿರಿ. 10
 - C) ಆರ್.ಎಸ್.ಬಾಗ್ ಅವರ ಜಾನಪದ ವರ್ಗೀಕರಣ ಸಿದ್ಧಾಂತವನ್ನು ಕುರಿತು ಬರೆಯಿರಿ. 10

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Ph.D. Course Work Question Paper Pattern

Course Work Paper 3

Examination 2022

100 Marks

Subject : Advance Knowledge in Core Domain of Urdu

Ques. 1) Answer Any one of the following (Long Answer Question) 20 Marks

(A) ترقی پسند اُردو افسانہ پر تفصیلی روشنی ڈالئے۔

(B) ترقی پسند تحریک سے وابستہ چند اہم افسانہ نگاروں پر اظہارِ خیال لیجئے۔

Ques. 2) Answer Any one of the following (Long Answer Question) 20 Marks

(A) احتشام حسین کی تنقید نگاری کا مفصیل جائزہ لیجئے۔

(B) ترقی پسند تنقید نے اُردو ادب کو کس طرز متاثر کیا لکھیئے۔

Ques. 3) Answer Any one of the following (Long Answer Question) 20 Marks

(A) ترقی پسند تحریک کے اغراض، مقاصد پر روشنی ڈالئے۔

(B) واضح کیجئے کہ ترقی پسندوں نے اُردو نظم کو کیوں اہمیت دی۔

Ques. 4) Answer Any two of the following (Short Answer Question)

10 Marks

(A) ترقی پسند اُردو نظم نگاری پر اظہارِ خیال کیجئے۔

10 Marks

(B) مجاز لکھنوی کی نظمیہ شاعری کا احاطہ کیجئے۔

10 Marks

(C) عصمت چغتائی کی ناول نگاری کا خاکہ کیجئے۔

Ques. 5) Answer Any two of the following (Short Answer Question)

10 Marks

(A) کرشن چندر کی ناولوں کا تعارف کرائئے۔

10 Marks

(B) واضح کیجئے کہ ترقی پسندوں نے غزل کی مخالفت کیوں کی؟

10 Marks

(C) کلیم الدین احمد کی تنقیدی فکر پر روشنی دالئے۔

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SLR-CW-107

Ph.D. Course Work, Exam 2022
Paper No. III. Advanced Knowledge in Core Domain of Education

Day and Date :

Total Marks-100

Time :

Instructions –

1. All questions are compulsory.
2. Figures to the right side indicate full marks.
3. Candidates who intend to write their answers in Marathi are advised to read original questions in English.

.....
Que 1) Answer **Any one** of the following questions in detail. [20 Marks]

A) What is meant by e-learning? What are the characteristics of e-learning? Explain different e-learning strategies.

B) What is meant by sustainable development? What are the goals of sustainable development? How will you play your role in achieving sustainable development?

Que 2) Answer **Any one** of the following questions in detail. [20 Marks]

A) Explain 'Divyangjan Swavalamban Yojana' and 'Vishesh Microfinance Yojana' run by National Handicapped Finance and Development Corporation(NHFDC).

B) What is meant by inclusive education? Explain its process, advantages and essential physical facilities.

Que 3) Answer **Any one** of the following questions in detail. [20 Marks]

A) Explain the structure and functions of NCERT and NCTE.

B) What are the Causes and characteristics of children with intellectual disabilities? Explain the various strategies for teaching children with intellectual disabilities.

Que 4) Answer **Any two** of the following questions in brief.

A) Explain the concept and principles of brain based learning.

[10 Mar

B) Explain the concept and present nature of teacher education.

[10 Marks]

C) Explain the role of the parents, teachers and community for supporting inclusion of children with diverse needs.

[10 Marks]

Que 5) Answer **Any two** of the following questions in brief.

A) Explain the concept of constructivism and differentiate between the constructivist and behaviouristic teaching learning process.

[10 Marks]

B) Explain the three groups of teacher thought process.

[10 Marks]

C) How will you use online meeting apps and social media for online teaching and learning?

[10 Marks]

मराठी रुपांतर

प्रश्न 1) खालीलपैकी कोणत्याही एका प्रश्नाचे सविस्तर उत्तर द्या. [20 गुण]

अ) ई-लर्निंग म्हणजे काय? ई-लर्निंगची वैशिष्ट्ये कोणती? विविध ई-लर्निंग कार्यनीती स्पष्ट करा.

ब) शाश्वत विकास म्हणजे काय? शाश्वत विकासाची ध्येये काय आहेत? शाश्वत विकास साधण्यामध्ये तुम्ही तुमची भूमिका कशी पार पाडाल?

प्रश्न 2) खालीलपैकी कोणत्याही एका प्रश्नाचे सविस्तर उत्तर द्या. [20 गुण]

अ) राष्ट्रीय अपंग वित्त आणि विकास महामंडळा (NHFDC) द्वारे चालवल्या जाणाऱ्या 'दिव्यांगजन स्वावलंबन योजना' आणि 'विशेष मायक्रोफायनान्स योजना' स्पष्ट करा.

ब) समावेशक शिक्षण म्हणजे काय? त्याची प्रक्रिया, फायदे आणि आवश्यक भौतिक सुविधा स्पष्ट करा.

प्रश्न 3) खालीलपैकी कोणत्याही एका प्रश्नाचे सविस्तर उत्तर द्या. [20 गुण]

अ) एन.सी.ई.आर.टी.(NCERT) आणि एन.सी.टी.ई.(NCTE) ची रचना आणि कार्य स्पष्ट करा.

ब) बौद्धिकदृष्ट्या अपंग मुलांची कारणे आणि वैशिष्ट्ये काय आहेत?

बौद्धिकदृष्ट्या अपंग असलेल्या मुलांना अध्यापन करण्यासाठीच्या विविध कार्यनीती स्पष्ट करा.

प्रश्न 4) खालीलपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे द्या.

अ) मेंदू आधारित शिक्षणाची संकल्पना आणि तत्वे स्पष्ट करा. [10गुण]

ब) शिक्षक शिक्षणाची संकल्पना आणि सध्याचे स्वरूप स्पष्ट करा. [10गुण]

क) विविध गरजा असलेल्या मुलांच्या समावेशनासाठी पालक, शिक्षक आणि समाजाची भूमिका स्पष्ट करा. [10गुण]

प्रश्न 5) खालीलपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे द्या.

अ) ज्ञानरचनावादाची संकल्पना स्पष्ट करा आणि ज्ञानरचनावादी आणि वर्तनवादी अध्ययन-अध्यापन प्रक्रियेतील फरक स्पष्ट करा. [10गुण]

ब) शिक्षक विचारप्रक्रीयेचे तीन गट स्पष्ट करा. [10गुण]

क) ऑनलाइन अध्ययन-अध्यापनासाठी तुम्ही ऑनलाइन मीटिंग अॅप्स आणि सोशल मीडियाचा वापर कसा कराल? [10गुण]

PH.D.COURSE WORK QUESTION PAPER

Examination 2022

Subject: Advances in Telecommunication

100Marks

Ques.1) Answer Any one of the following 20Marks

- A) Define spectrum sensing. List the energy detection techniques in cognitive radio and explain in detail.
- B) Four received power measurements were taken at distances of 100m, 200m, 1km, and 3km from a transmitter. These measured values are given in following table. It is assumed that the pathloss for these measurements follow log-normal shadowing, Where $d_0 = 100m$. Find
- The minimum mean square error (MMSE), estimate for pathloss exponent, n ;
 - Calculate the standard deviation about the mean value.
 - Estimate the received power at $d = 2km$ using resulting model.
 - Predict the likelihood that the received signal level at 2km will be greater than -60dbm.
 - Predict the percentage of area within a 2km radius cell that receives signal greater than -60dbm.

Ques.2) Answer Any one of the following 20Marks

- A) What aspect of the MIMO model is fundamentally different than conventional transmits scenarios? What is rank a measure of in MIMO systems? How does capacity increase in MIMO system?
- B) What do you understand by 5G simulation methodology with reference to 5G tools for simulation efficiency, technology supported, simulation models categories, user and network key performance indicators and simulation workflow.

Ques.3) Answer Any one of the following

20

- Marks A) What is cooperative communication network? Give merits, demerits and applications. Explain basic techniques of cooperative communication.
- B) Elaborate the problems that Blockchain solves. Explain challenges faced by Blockchain technology. State different characteristics of Blockchain.

Ques.4) Answer Any Two of the following

10 Marks

- Draw and explain 5G millimeter wave channel model.
- How interference management is achieved in 5G and beyond networks.
- Explain cell site power consumption modeling in green communication.

Ques.5) Answer Any Two of the following

10 marks

- Draw and explain cognitive resource manager framework.
- What are the security issues, common vulnerabilities and prevention mechanism in E-business.
- What are the different types of Blockchain. Draw and explain architecture of Blockchain technology.

ADVANCES IN IMAGE AND VIDEO PROCESSING

Ph.D Course Work Question Paper Pattern

Examination 2022

Course Work Paper 3

100 Marks

Ques. 1) Answer Any one of the following

20 Marks

- A) Explain Bitmap, GIF, TIFF and JPEG format with their special attributes
- B) An image segment is shown in the fig below. Let V be the set of gray level values used to define connectivity in 0re image. Compute D_e , D_4 , D_8 and D_m distances between pixel p and q for
 - (a) $V = \{0, 1\}$
 - (b) $V = \{1, 2\}$

3	1	2	1
2	2	0	2
1	2	1	1
1	0	1	2

(p)

(q)

Ques. 2) Answer Any one of the following

20 Marks

- A) Explain discrete histogram equalization technique in detail and also explain why this technique does not in general yield a flat histogram.
- B) Explain simultaneous motion estimation and segmentation in details with example.

Ques. 3) Answer Any one of the following

20 Marks

- A) Explain each strategies of regularized inversion in details
- B) Explain the principle of the following region-based segmentation procedures:
 - (i) Region growing
 - (ii) Region splitting
 - (iii) Split and merge

What is difference do you find in these three approaches?

Ques. 4) Answer Any Two of the following

- A) Explain the digital video processing in details 10 Marks
- B) Explain the Point operation technique of image enhancement in details. 10 Marks
- C) Explain multi frame restoration in details 10 Marks

Ques. 5) Answer Any Two of the following

- A) Explain Inverse filtering method of image restoration. 10 Marks
- B) Explain SVD Pseudo inverse Spatial Image Restoration 10 Marks
- C) Explain the three video format in details. 10 Marks

Seat No.	
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ADVANCED KNOWLEDGE IN CORE DOMAIN PHARMACY

Ph.D Course Work Question Paper Pattern

Examination 2022

Course Work Paper 3**100 Marks**

Ques. 1) Answer Any one of the following (Long Answer Question)

20 Marks

- A) Describe in details Characterization of Nanoparticulate drug delivery System.
- B) Discuss the various Extraction techniques of Medicinal plants.

Ques. 2) Answer Any one of the following (Long Answer Question)

20 Marks

- A) Discuss the Methods for enhancing transdermal drug delivery.
- B) Discuss the various steps involved in Drug development Process.

Ques. 3) Answer Any one of the following (Long Answer Question)

20 Marks

- A) Explain the different methods of preparation of liposomes.
- B) Discuss the commonly used methods in Drug Design.

Ques. 4) Answer Any Two of the following (Short Answer Question)

A) Discuss in details different types of ocular DDS. 10 Marks

B) Explain the guidelines of OECD for animal experimentation. 10 Marks

C) Discuss the instrumentation & applications of GLC. 10 Marks

Ques. 5) Answer Any Two of the following (Short Answer Question)

A) Describe Solubility analysis & Stability Analysis parameters studied in Preformulation. 10 Marks

B) Discuss the standardization and quality control of herbal crude drugs. 10 Marks

C) Discuss the Physicochemical factors to be considered in selection of a drug candidate for controlled delivery formulations. 10 Marks

Seat No.	
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SLR-CW-83

PH.D. COURSE WORK QUESTION PAPER

PAPER – III: ADVANCED KNOWLEDGE IN CORE DOMAIN OF CONCERNED SUBJECT
(Geoinformatics) Examination 2022

Course Work Paper 3	100 Marks
Ques. 1) Answer Any one of the following (Long Answer Question)	20 Marks
A) Write full essay on Google Earth Engine.	
B) What is network analysis? Explain different types of Network analysis.	20 Marks
Ques. 2) Answer Any one of the following (Long Answer Question)	
A) How hydrology tool of ARCGIS used for watershed analysis.	
B) Write a full note on Hyperspectral Remote Sensing.	20 Marks
Ques. 3) Answer Any one of the following (Long Answer Question)	
A) Discuss with neat diagrams fluvial Erosional and Depositional landforms.	
B) What are different concept and principal of Web GIS. Write down its significance.	
Ques. 4) Answer Any Two of the following (Short Answer Question)	
A) Planning and collection of ground truth data	10 Marks
B) Difference between GPS and DGPS	10 Marks
C) Radar Remote sensing	
Ques. 5) Answer Any Two of the following (Short Answer Question)	
A) Types of weathering	10 Marks
B) Slope and Aspect	10 Marks
C) Natural and manmade disaster	10 Marks

Biotechnology Ph. D. Course work Examination, 2022

Subject: Paper-III: Advance Knowledge in Biotechnology (w.e.f. June, 2021)

Time: 3 Hours

Max. Marks: 100

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Draw neat labeled diagrams wherever necessary.
-
-

- Q. 1 Answer **Any One** of the following. 20
- A. Explain in detail operon model in prokaryotes with example.
 - B. Describe in detail types of fermentation processes with their advantages and disadvantages.
- Q. 2 Answer **Any One** of the following. 20
- A. Write an essay on genetic transformation methods used in plant sciences.
 - B. Explain in detail Stem cell therapies applied control of diseases with any two examples.
- Q. 3 Answer **Any One** of the following. 20
- A. Describe the qualitative and quantitative analysis methods used in drug molecule analysis.
 - B. Write an essay on solid waste management methods.
- Q. 4 Answer **Any Two** of the following. 20
- A. Explain in brief molecular markers with examples.
 - B. Write in brief measures of dispersion.
 - C. Describe in brief haploid and triploid plant production.
- Q. 5 Answer **Any Two** of the following. 20
- A. Describe in brief seed technology.
 - B. Explain in brief on bioinformatics of sequence analysis.
 - C. Write in brief biogas production.

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Ph. D. Course work Paper

Course Work Paper 3

Paper – Advance Domain in Microbiology: Environmental and Agricultural Microbiology

Examination 2022

100 Marks

Ques. 1) Answer **Any one** of the following 20 Marks

- A) What is the difference between disinfection and sterilization? Which are the different methods used for disinfection and sterilization of biohazard waste?
- B) Explain the principle, working and applications of UV-Visible spectroscopy.

Ques. 2) Answer **Any one** of the following 20 Marks

- A) What is IPR? Describe the copyright, trademarks, patents and trade secrets?
- B) Explain the characteristic and treatment of waste generated in tannery and textile industries.

Ques. 3) Answer **Any one** of the following 20 Marks

- A) What are Xenobiotic compounds? Describe the In situ and Ex-situ methods used for bioremediation.
- B) What are extremophiles? Explain the techniques for the isolation, enumeration and identification of methanogens.

Ques. 4) Answer **Any Two** of the following

- A) Explain the FAME analysis method and comment on its application? 10 Marks
- B) Describe the technique of Gel filtration chromatography for purification of Biomolecul. 10 Marks
-) Comment on bioinsecticides and describe their applications. 10 Marks

Ques. 5) Answer **Any Two** of the following

- A) Describe the preparation and applications of non-symbiotic nitrogen fixer in agriculture. 10 Marks
- B) Explain in detail about Good Microbiology laboratory practices. 10 Marks
- C) What is GMO? Comments on its applications with suitable example. 10 Marks

Seat No.	
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SLR-CW-79

Subject: Microbiology EXAMINATION 2022

Course work Paper- III

Medical microbiology and Immunology (CBCS)

Advanced domain in microbiology

Marks- 100

Ques. 1) Answer Any one of the following. 20

A) Give an account of Good laboratory practices with reference to specification for BSL-1, BSL -2 and BSL-3

B) Give an account of emergence of medically important fungal diseases with reference to Non albicans Candida, Histoplasmosis, Aspergillosis

Ques. 2) Answer Any one of the following. 20

A) Give an account of principle, working and applications of NMR

B) Explain basic requirements of patentability and also explain National and international patent laws

Ques. 3) Answer Any one of the following. 20

A) Elaborate classification of antibiotic and mechanism of their action

B) Write in detail about principle, working and applications of PAGE and SDS PAGE

Ques. 4) Answer Any Two of the following.

A) Write a note on immunoprophylaxis 10

B) Write a note on principle, working and applications gel filtration and ion exchange chromatography 10

C) Give an account of etiology, pathogenesis, symptoms and diagnosis of Leptospirosis 10

Ques. 5) Answer Any Two of the following.

A) Give an account of etiology, pathogenesis, symptoms and diagnosis of Dengue. 10

B) Give an account of discarding of biohazardous waste.

10

C) Give an account of biological weapons .

10

EXAMINATION 2022

Ph.D Course Work

Recent Trends in Chemistry

Course Work Paper 3

100 Marks

Ques. 1) Answer Any one of the following (Long Answer Question)

20 Marks

- A) Derive the Bragg's diffraction law and discuss the generation of x-rays using x-ray tube.
- B) Discuss in detail the steps involved in method development and validation with suitable examples.

Ques. 2) Answer Any one of the following (Long Answer Question)

20 Marks

- A) State the general rules for predicting the prominent peaks in mass spectroscopy with suitable examples.
- B) Explain briefly the concepts: solvent free synthesis, green solvents, microwave method of synthesis and phase transfer catalysts.

Ques. 3) Answer Any one of the following (Long Answer Question)

20 Marks

- A) Explain in short the working principle of XPS, SEM, TGA and Cyclic voltammetry.
- B) What is the principle of ESR? Draw schematic diagram of a typical ESR spectrometer and explain the role of main components in it and state the applications of ESR.

Ques. 4) Answer Any Two of the following (Short Answer Question)

A) Write notes on carbon nano materials and photocatalysis. **10 Marks**B) In what way the hydrogen bonding affects the chemical shifts in NMR? Explain in short with suitable example. **10 Marks**C) Explain the column types used in HPLC and state its applications **10 Marks**

Ques. 5) Answer Any Two of the following (Short Answer Question)

A) Describe in brief any two methods of nanoparticle preparation. **10 Marks**B) Detail the procedure for antibacterial and antifungal studies. **10 Marks**C) What is the working principle of ion chromatography? Write the applications of ion chromatography. **10 Mark**

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SLR-CW-74

Ph.D Course Work Paper- III

EXAMINATION 2022

Mathematics

FRACTIONAL DIFFERENTIAL EQUATIONS

Time

Marks : 100

1. Answer Any one of the following (20)

(A) Using Laplace transform method find the Caputo derivative of e^{at} , $\sin 2t$, $\cos 2t$.

(B) Solve the following nonhomogeneous fractional differential equation

$$\begin{aligned} {}_0^C D_t^\alpha y(t) - \lambda y(t) &= h(t); \quad t > 0, n-1 < \alpha < n \\ y^{(k)}(0) &= b_k; \quad k = 0, 1, \dots, n-1. \end{aligned}$$

2. Answer Any one of the following (20)

(A) Find the solution of the fractional differential equation

$$y''(x) + ay^{\frac{3}{2}}(x) + by(x) = 0,$$

with the initial conditions $y(0) = c_0$ and $y'(0) = c_1$

(B) Let $f \in C[a, b]$ and $m \in \mathbb{N}$. Prove that

$${}_a D_t^P f(t) = \lim_{h \rightarrow 0} \lim_{nh \rightarrow t-a} h^{-P} \sum_{r=0}^n (-1)^r \binom{P}{r} f(t - rh)$$

represents the derivative of order m if $P = m$ and the m -fold integral if $P = -m$.

3. Answer Any one of the following (20)

(A) If the fractional derivative ${}_a^R D_x^\alpha f(x)$, $(k-1 \leq \alpha < k)$ of a function $f(x)$ is integrable, then prove that

$${}_a^R D_x^{-\alpha} ({}_a^R D_x^\beta f(x)) = {}_a^R D_x^{\beta-\alpha} f(x) - \sum_{j=1}^k \frac{(x-a)^{\alpha-j}}{\Gamma(\alpha-j+1)} [{}_a^R D_x^{\beta-j} f(x)]_{x=a}$$

(B) Let $\alpha \in \mathbb{R}$ such that $0 < \alpha < 1$, then prove that the Fourier transform of fractional integral for well known function f is given by

$$F\{I_{\pm}^\alpha f(x); z\} = (\pm 2\pi iz)^{-\alpha} \hat{f}(z).$$

4. Answer Any Two of the following (20)

(A) Prove that $\Gamma(z) = \lim_{n \rightarrow \infty} \frac{n! n^z}{z(z+1) \cdots (z+n)}$; $z \in C, \operatorname{Re}(z) > 0, n \in N$

(B) Let $n - 1 < \alpha < n, (n \in N)$ and $F_e\{g(t) : w\} = G(w)$. If D^α denotes any of the fractional derivative Riemann-Liouville, ${}_{-\infty}D_t^\alpha$, Grunwald Letnikov ${}_{-\infty}D_t^\alpha$ or Caputo ${}_{-\infty}^C D_t^\alpha$, then $F_e\{D^\alpha g(t) : w\} = (-iw)^\alpha G(w)$.

(C) Evaluate the Grunwald-Letnikov fractional derivative of the power function $f(x) = (x - a)^\mu$, where μ is a real number.

5. Answer Any Two of the following (20)

(A) Find ${}_0^C D_x^\alpha e^{\lambda x}$ and ${}_0^C D_x^\alpha \sin \lambda x$, where $n - 1 < \alpha < n \in N, \alpha \in R, \lambda \in C$.

(B) Evaluate Mellin transform of Riemann-Liouville fractional derivative.

(C) Find the solution of the following differential equation

$${}_0^C D_x^\alpha y - \lambda {}_0^C D_x^\beta y = 0$$

$$y^k(0) = b_k, \quad k = 0, 1, \dots, n - 1,$$

where $n - 1 < \alpha < n, \beta < \alpha - 1$.

Ph.D Course Work Examination-2022**Course Work Paper - III****Advanced Knowledge in Commerce And Management****Mark - 100**

Ques. 1) Answer Any one of the following 20

Marks A) Describe virtual marketing, green marketing and emotional marketing in detail.

B) Explain Service Marketing, its significance and challenges

Ques. 2) Answer Any one of the following 20

Marks A) What is Talent Management System? How will you evaluate and monitor Talent Management System?

B) Describe Indian and western conceptualizations and theories of ethics, ethical dilemma and ethical climate.

Ques. 3) Answer Any one of the following 20

Marks A) Explain the Meaning of IFRS, IFRS Foundation and its structure, need of global accounting standards and procedure to set IFRS.

B) Describe IFRS in India and Indian Accounting Standards as notified in section 133 of the Companies Act, 2013

Ques. 4) Answer Any Two of the following

A) Describe NRLM and SRLM. 10 Marks

B) Explain the recent trends in Banking Products and Services, 10 Marks

C) Explain Credit Rating Models in Banks. 10 Marks

Ques. 5) Answer Any Two of the following

A) Describe Ind AS 12: Income Taxes 10 Marks

B) Explain trends in mobile banking.

10 Marks

C) Explain Micro Credit and financial inclusion

10 Marks

Ph.D Course Work Examination-2022**Course Work Paper - III****Advanced Knowledge in Commerce And Management****MARK - 100**

Ques. 1) Answer Any one of the following 20

Marks A) Describe virtual marketing, green marketing and emotional marketing in detail.

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B) Explain trends in mobile banking.

10 Marks

C) Explain Micro Credit and financial inclusion

10 Marks

Ph.D Course Work Examination-2022

Ph.D Course Work Question Paper

Paper - III

Mark - 100

Advanced Knowledge in Core Domain of Physical Education

प्रश्न. 1) खालीलपैकी कोणत्याही एकाचे उत्तर द्या (दीर्घोत्तरी प्रश्न) 20 गुण

अ) क्रीडा प्रशिक्षण पद्धतीच्या विकासामध्ये शरीरशास्त्र व गतिशास्त्राचा वापर स्पष्ट करा?

किंवा

ब) क्रीडा मानसशास्त्राची आवश्यकता व महत्त्व स्पष्ट करा?

प्रश्न. 2) खालीलपैकी कोणत्याही एकाचे उत्तर द्या (दीर्घोत्तरी प्रश्न) 20 गुण

अ) व्यायाम व प्रशिक्षणाचे मानवी शरीरविज्ञानावर होणारे परिणाम समजावून सांगा?
किंवा

ब) विविध प्रकारचे सॉफ्टवेअर व क्रीडाविज्ञान संशोधनातील मूल्यमापनातील त्यांचे महत्त्व यावर चर्चा करा.

प्रश्न. 3) खालीलपैकी कोणत्याही एकाचे उत्तर द्या ((दीर्घोत्तरी प्रश्न) 20 गुण

अ) शिकविणे व प्रशिक्षणावर वातावरणाचा प्रभाव वर्णन करा?

किंवा

ब) ताण व्यवस्थापन व तणावाचे मोजमाप स्पष्ट करा?

प्रश्न. 4) खालीलपैकी कोणत्याही दोनची उत्तरे द्या (लघुत्तरी प्रश्न) प्रत्येकी 10 गुण

अ) चाचणीची व्याख्या करा व मूल्यमापन प्रक्रियेत चाचणी महत्त्वाची का आहे ते स्पष्ट करा?

ब) व्यायाम शरीरविज्ञानाची ध्येय, उद्दिष्टे काय आहेत?

क) क्रीडा मानसशास्त्राचा इतर क्रीडा शास्त्रांशी संबंध लिहा?

प्रश्न. 5) खालीलपैकी कोणत्याही दोनची उत्तरे द्या (लघुत्तरी प्रश्न) प्रत्येकी 10 गुण

अ) खेळातील चांगल्या कामगिरीसाठी गतिशास्त्राच्या वापराचे वर्णन करा?

ब) न्यूटनच्या गतीचे नियम स्पष्ट करा? खेळ आणि खेळांमध्ये त्याचा उपयोग सांगा?

क) क्रीडा मानसशास्त्राचा अर्थ, व्याप्ती सांगून विकासातील योगदान स्पष्ट करा?

Seat No.	
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Paper - III

Advanced Knowledge in Core Domain of Physical Education

100 Marks

Que. 1) Answer Any one of the following (Long Answer Question)

20 Marks

A) Explain the use of anatomy and kinesiology in the development of sports training methods?

OR

B) Define the necessity and importance of sports psychology?

Que. 2) Answer Any one of the following (Long Answer Question)

20 Marks

A) Explain effects of exercise and training on human physiology?

OR

B) Discuss the different types of software and their importance in evaluation of sports science research?

Que. 3) Answer Any one of the following (Long Answer Question)

20 Marks

A) Describe the influence of environment on coaching and training?

OR

B) Explain stress management and measurement of stress?

Que. 4) Answer Any Two of the following (Short Answer Question)

10 Marks Each

A) Define Test and explain why test is important in evaluation process?

B) What is the aim and objectives of exercise physiology?

C) Write relationship of sports psychology with other sports sciences?

Que. 5) Answer Any Two of the following (Short Answer Question)

10 Marks Each

A) Describe application of kinesiology for better performance in sports?

B) Explain Newton's Laws of Motion and state its application in sports and games?

C) Explain meaning, scope and development of sports psychology?

Ph.D Course Work Examination-2022

Subject - Mechanical Engineering (Advanced. Knowledge in Core Domain of Concerned.
Subjects

Manufacturing Engineering*Course Work Paper 3**100 Marks**Que.1 Attempt any one the following**20 Marks*

- A) List the steps involved in design of experiments and describe each of them emphasizing how those are to be accomplished.
OR
- B) Explain a single variable optimization technique. In the case of multivariable optimization with constraints, state and explain the necessary and sufficient criteria for the existence of relative optima.

*Que 2 Attempt any one the following**20 Marks*

- A) Provide a detailed explanation of measurement uncertainties for variables like pressure, temperature, and flow. Describe the internal and external estimate of Uncertainty.
OR
- B) What are the reasons for large variety of casting processes that have been developed over the years? Enlist and elaborate. Describe different types of casting defects with labelled sketch.

*Que.3 Attempt any one the following**20 Marks*

- A) Enlist the special provisions required to be made, with respect to the following features while designing CNC machine tools?
1) Drives and spindles 2) Feed drives and servo motors 3) Machine tool structures
4) Guide ways 5) Tool changing system.
OR
- B) Explain the various methods used in determining the following powder particle characteristics: i) Particle size ii) Porosity. iii) Surface area. iv) Particle density.

*Que 4 Attempt any one the following**20 Marks*

- A) State statistical significance of Six Sigma. How it is used in quality improvement. State methodology of six sigma for system improvement.
- B) What is process capability? How does quality control helps in controlling the variation. What are the various control charts for attributes and variables?
- C) Give a stage –by-stage explanation of forging process. Explain drop forging with a neat labelled sketch and list the typical products manufactured by drop forging.

*Que.5 Attempt any one the following**20 Marks*

- A) What is the necessity of unconventional machining processes, explain the process selection parameters. Explain the method of AJM with help of schematic diagram.
- B) What are the important considerations while designing Jigs and Fixtures? Explain important accessories of Jigs and Fixtures.
- C) Discuss in details the classification of welding, need for cleaning the surfaces to be welded? Describe any one type of welding process in detail.

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SLR-CW-11

Ph.D. Course Work Paper- III (New) Examination, 2022

Subject: English

A Study of English Literary and Critical Theories

Maximum Time: 3 Hrs

Maximum Marks: 100

Instructions: 1. All questions are compulsory.

2. Figures to the right indicate full marks.

- Q. 1. Answer any one of the following: 20
- A. Bring out an outline of the rise of the feminist theories.
- B. How has Kate Millet contributed to the feminist theory through her work “Sexual Politics”?
- Q. 2. Answer any one of the following: 20
- A. Illuminate the difference between Structuralism and Poststructuralism.
- B. How has Rolland Barthes given his contribution to Poststructuralism?
- Q. 3. Answer any one of the following: 20
- A. Write in detail Edward Said’s interpretation of Orientalism.
- B. Bring out a comparative interpretation of Homi K. Bhabha and Gayatri Spivak’s contribution to Postcolonialism.
- Q.4. Answer any two of the following: 20
- A. Gay theories
- B. Types of translation
- C. Queer theories
- Q. 5. Answer any two of the following: 20
- A. Concept of Comparative Studies
- B. Role of language in Comparative Studies
- C. Comparative Studies and Culture

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SLR-CW-73

Ph.D. Course Work Examination 2022
STATISTICS Paper-III
Advanced Statistics

Day and Date:

Total Marks: 100

Time:

Instructions:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

- Q. 1. Attempt any one of the following: (20)**
- A) Explain in detail control chart. Discuss how it helps in detecting lack of control in a process. Explain phase I and Phase II applications of control chart.
 - B) Discuss various steps involved in the construction of \bar{X} and R charts. Obtain the control limits of these charts when standards are known and standards are unknown.
- Q. 2 Attempt any one of the following: (20)**
- A) Discuss in detail the development and implementation of a control chart for nonconforming when sample size is not fixed and the standards are not given.
 - B) Explain exponentially weighted moving average (EWMA) chart with at least one example of its potential application. Explain the procedure of obtaining control limits of EWMA chart. In which situation it is preferred to \bar{X} chart.
- Q. 3 Attempt any one of the following: (20)**
- A) Describe a multiple linear regression model. Write the model in matrix form. Find unbiased estimators of vector of regression parameters in the model. State the sampling distribution of these estimators under normality assumption.
 - B) Discuss the need of data transformation in regression analysis. Explain the Box-Cox method of transforming the response variable. Explain the procedure of computing λ , the parameter of power transformation.
- Q. 4 Attempt any two of the following: (20)**
- A) What is artificial neural network (ANN)? Discuss any two types of activation functions in ANN.
 - B) Explain Jack-knife method of bias reduction. State its properties.

- C) State and prove the result of obtaining model sample from $N(0,1)$ using Box-Muller transformation.

Q. 5 Attempt any two of the following: (20)

- A) Define OC and ARL of a control chart. Derive the expression for OC of \bar{X} chart with usual assumptions.
- B) Explain the Boot-strap method. Write the algorithm for the same.
- C) Explain residual plot. Outline procedure of construction of normal probability plot and procedure for checking the normality assumption.

Ph.D. Course Work Examination, 2022
MARATHI

Paper- III मराठी साहित्याचे स्वरूप आणि उपयोजन

Max. Marks : 100

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- प्रश्न 1 ला कोणताही एक सोडवा. (दीर्घोत्तरी प्रश्न) 20 गुण
- अ) मराठी साहित्याची सांस्कृतिक पार्श्वभूमी विशद करा.
ब) समाज आणि संस्कृती यातील सहसंबंध स्पष्ट करा.
- प्रश्न 2 ला कोणताही एक सोडवा. (दीर्घोत्तरी प्रश्न) 20 गुण
- अ) संत साहित्याचे सांस्कृतिक आकलन विशद करा.
ब) फुले, मार्क्स आणि आंबेडकरी समीक्षा पध्दतीचे वेगळेपण विशद करा.
- प्रश्न 3 ला कोणताही एक सोडवा. (दीर्घोत्तरी प्रश्न) 20 गुण
- अ) आधुनिक मराठी साहित्यातील विविध प्रवाहांचे महत्त्व विशद करा.
ब) साहित्याचा समीक्षा व्यवहार स्पष्ट करा.
- प्रश्न 4 था कोणतेही दोन सोडवा. (लघुत्तरी प्रश्न) 20 गुण
- अ) संस्कृती म्हणजे काय ?
ब) समाजशास्त्रीय समीक्षा पध्दतीचे स्वरूप विशद करा
क) तौलनिक समीक्षा पध्दतीचे स्वरूप स्पष्ट करा.
- प्रश्न 5 वा कोणतेही दोन सोडवा. (लघुत्तरी प्रश्न) 20 गुण
- अ) भाषा व व्याकरण सहसंबंध स्पष्ट करा.
ब) साहित्य आणि वाचक यांचे उपयोजन मूल्य विशद करा
क) साहित्याचे वर्तमान उपयोजन स्पष्ट करा.

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SLR-CW-71

Ph. D. Course Work Examination, 2022

BOTANY (CBCS Pattern)

Paper-III, Recent Trends in Botany

Day and Date :

Total Marks :100

Time :

Instruction: I) All questions are compulsory.

II) All questions carry equal marks.

III) Draw neat and labelled diagrams wherever necessary.

IV) Figures to the right indicate full marks.

Q.1. Answer any one of the following **20**

- A) Explain the grain smut of jowar and citrus canker disease studied by you.
- B) Describe the application of plant pathology in agriculture and industry.

Q.2. Answer any one of the following **20**

- A) Describe the exclusion of inoculum and integrated pest management in details.
- B) Write the plant quarantine and trichoderma mycorrhizal fungi studied by you.

Q.3. Answer any one of the following **20**

- A. Describe the reproduction control mechanisms in crop plants and asexual reproduction.
- B. Explain the heterosis and inbreeding depression studied by you.

Q.4. Answer any two of the following **(10x2=20)**

- A. Male sterility.
- B. Plant genetic resources.
- C. Typification.

Q.5. Answer any two of the following **(10x2=20)**

- A. Dahlgren's system.
2. Photosynthetic pigments.
3. Allelopathy.

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SLR-CW-67

Examination-2022

Ph.D Course Work Question Paper Pattern

Course Work Paper 3 Characterization Techniques

100 Marks

Ques. 1) Answer Any one of the following (Long Answer Question) 20 Marks

- A) Explain basic principle and instrumental configuration of XPS.
- B) Explain basic principle and instrumental configuration of SEM.

Ques. 2) Answer Any one of the following (Long Answer Question) 20 Marks

- A) Explain basic principle and instrumental configuration of TEM.
- B) Explain basic principle and instrumental configuration of FTIR spectroscopy.

Ques. 3) Answer Any one of the following (Long Answer Question) 20 Marks

- A) Explain basic principle and instrumental configuration of UV-vis-NIR spectroscopy.
- B) Explain different types of x-ray sources and detectors used in x-ray diffraction technique.

Ques. 4) Answer Any Two of the following (Short Answer Question)

- A) What are the advantages of FTIR over IR spectroscopy? 20 Marks
- B) What are the advantages of FESEM over SEM?
- C) What is the difference between θ - θ and θ - 2θ spectrometers?

Ques. 5) Answer Any Two of the following (Short Answer Question) 20 Marks

- A) Explain different modes of AFM imaging with their advantages and limitations.
- B) How UPS is used for valance band analysis?
- C) Discuss sample preparation methods for SEM and TEM.

Ph.D. Course Work Question PaperCourse Work Paper 3 **BASIC AND ADVANCE KNOWLEDGE IN HISTORY** 100 Marks**Ques 1) Answer Any One of the Following (Long Answer Question) 20 Marks**

a) Discuss on the features of Harappan urban planning.

हडप्पाकालीन नगररचनेची वैशिष्ट्ये सांगा.

b) Explain the philosophy of Buddhism.

बौद्ध धर्मातील तत्वज्ञानाची माहिती द्या.

Ques 2) Answer any one of the following (Long Answer Question) 20 Marks

a) Explain the reasons for the rise of nationalism in India.

भारतातील राष्ट्रवादाच्या उदयाची कारणे स्पष्ट करा.

b) Review the revolutionary movement in Maharashtra.

महाराष्ट्रातील क्रांतिकारी चळवळीचा आढावा घ्या.

Ques 3) Answer any one of the following (Long Answer Question) 20 Marks

a) Evaluate the achievements of Emperor Ashoka.

सम्राट अशोकाच्या कामगिरीचे मुल्यमापन करा.

b) Describe the social conditions during the Sultan Shahi period.

सुलतानशाही कालीन सामाजिक परिस्थितीचे वर्णन करा.

Ques 4) Answer any Two of the following (Short Answer Question)

a) Explain the nature of history by explaining its meaning.

10 Marks

इतिहासाचा अर्थ सांगून त्याचे स्वरूप स्पष्ट करा.

b) Explain the importance of industrialization in the history of modern world.

10 Marks

आधुनिक जगाच्या इतिहासातील औद्योगिक क्रांतीचे महत्व विशद करा.

c) State the contribution of Mughal state to architectural development. **10 Marks**

मोगल राज्यकर्त्यांचे स्थापत्य विकासातील योगदान सांगा.

Ques 5) Answer any Two of the following (Short Answer Question)

a) Explain the consequences of the uprising of 1857. **10 Marks**
1857 च्या उठावाचे परिणाम विशद करा.

b) Explain the contribution of Lokmanya Tilak in Indian freedom movement. **10 Marks**

भारतीय स्वातंत्र्य चळवळीतील लोकमान्य टिळकांचे योगदान स्पष्ट करा.

c) Write a note on the importance of non-cooperation movement in Indian freedom struggle. **10 Marks**

भारतीय स्वातंत्र्य लढयातील असहकार चळवळीचे महत्व विशद करा.

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Examination-2022

SLR-CW-47

Ph.D. Course Work Question paper.

Course Work Paper-3

Subject : HUMAN RESOURCE MANAGEMENT

Marks 100

- Q.1. Answer any one of the following (Long Answer Question) (20 M)
- A) Discuss the HR process and HR planning?
 - B) Define workers participation in management and discuss its forms?
- Q. 2 Answers any one of the following (Long answer Question) (20 M)
- A) Explain various objectives and performance Appraisal.
 - B) Define labour welfare and discuss its scope.
- Q. 3 Answer any one of the following (Long answer Question) (20 M)
- A) Elaborate employee benefit under ESI Act.
 - B) Define CSR and discuss its importance.
- Q. 4 Answer any two of the following (Short answer Question)
- A) Define HRM and HRD and discuss its scope. (10 M)
 - B) Discuss HR policies and practices. (10 M)
 - C) Principles and Functions of HRM & HRD. (10 M)
- Q. 5 Answer any two of the following (Short answer Question)
- A) Write a note on origin and development of labour legislation. (10 M)
 - B) Discuss principles of labour legislations. (10 M)
 - C) Write a note on importance of labour legislation in India. (10 M)

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SLR-CW-48

EXAMINATION-2022

***Ph.D Course Work Question Paper Pattern
Course Work Paper 3***

***Urban, Rural and Tribal Community Development
100 Marks***

Ques. 1) Answer Any one of the following (Long Answer Question)

20 Marks

A) Discuss the principles of Community Organization and explain the roles of Community Organizer

B) Highlight the schemes related to urban community development

Ques. 2) Answer Any one of the following (Long Answer Question)

20 Marks

A) Explain the meaning of Small Scale Industry and discuss its challenges

B) Write a brief note on “Importance of People’s Participation in Rural Community Development”

Ques. 3) Answer Any one of the following (Long Answer Question)

20 Marks

A) Elaborate the various welfare measures for tribal community development.

B) Describe the importance of Social work Practice in promoting tribal community development.

Ques. 4) Answer Any Two of the following (Short Answer Question)

A) Problems in functioning of Panchayat Raj Institutions *10 Marks*

B) Meaning and Types of Local Self Governance in Urban Areas *10 Marks*

C) Cooperative Movements After Independence in India *10 Marks*

Ques. 5) Answer Any Two of the following (Short Answer Question)

- A) Techniques of Social Action
- B) Barriers in community organization
- C) e-governance

10 Marks

10 Marks

10 Marks

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No.

SLR-CW-103

Ph.D. Course Work Examination, 2022

ENGINEERING (Paper - IV)

Advanced Developments in Industrial & Production Engineering (Old) (Elective)

Day & Date:

Total Marks=100

Time:

Qu. 1 a) What is time series analysis? What are the components of Time series?

How the forecast is made from the time series. 10

b) Solve any two questions: 10

i. What are the external and internal conditions influencing strategy?

ii. What are different measures of capacity? Explain.

iii. What are the objectives of inventory control?

Qu. 2 a) Explain basic elements of Just-in-Time. 10

b) Solve any two questions: 10

i. Compare between product layout and process layout.

ii. Explain working of KANBAN system.

iii. Explain the term synchronous manufacturing.

Qu. 3 a) Explain the term supply chain management and what are the supply chain management strategies? 10

b) Solve any two questions: 10

i. What are the functions of master production schedule?

ii. Explain the different costs associated with the inventory.

iii. What is meant by outsourcing? What are the reasons and risks of outsourcing?

Qu. 4 a) Explain ABC analysis and VED analysis of inventory control. 10

b) Solve any two questions: 10

i. Explain moving average forecasting method.

ii. Define MRP and explain MRP objectives.

iii. What is meant by Loading? Explain GANTT chart and visual load profiles related to loading.

Qu. 5 a) Explain forward scheduling and backward scheduling with neat sketch?

10

b) Solve any two questions: 10

i. Explain exponential smoothing method of forecasting?

ii. Compare JIT and MRP.

iii. What are the different reasons for keeping inventory?

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SLR-CW-36

Ph.D Course Work Examination-2022

**ECONOMICS (Paper – IV)
Economics of Agriculture**

Total Marks: 100

Time: 3 Hours.

- Instructions :1) All questions are compulsory.
2) All questions carry equal marks

- Que.1 A) Explain the law of diminishing returns to scale. 10
B) Answers in short (Any two) 10
1) Boserup Model
2) Role of agriculture in economic development
3) Genetic Modification in Agriculture
- Que. 2 A) Explain the new technology and shift in agricultural production in detail. 10
B) Answers in short (Any two) 10
1) Production function
2) Expansion path
3) Centre State relationship in Agriculture development
- Que. 3 A) What is the status of irrigation in India and review the Watershed Development Program in India with detail. 10
B) Answers in short (Any two) 10
1) Precision farming
2) Contract farming in India
3) Development of corporate farming in India
- Que. 4 A) What steps have been undertaken by government of India for food security explain in detail? 10
B) Answer in short (Any two) 10
1) Agreement on Agriculture (AOA)
2) Performance of Agricultural Exports
3) Organic Farming
- Que. 5 A) Review the development of agricultural pricing policy of India in detail? 10
B) Answers in short (Any two) 10
1) Cooperative finance to agriculture
2) Land degradation
3) NABARD

मराठी भाषांतर

पी.एच.डी कोर्स वर्क विषय: अर्थशास्त्र (Economics of Agriculture)

- प्रश्न.१ अ) घटत्या उत्पादन फलाच्या नियमाचे स्पष्टीकरण विस्ताराने लिहा. गुण-१०
ब) थोडक्यात उत्तरे लिहा (कोणतेही दोन) गुण-१०
१) बोसेरप प्रतिमान
२) आर्थिक विकासातील कृषिक्षेत्राची भूमिका
३) कृषिक्षेत्रातील जणुकिय सुधारणा
- प्रश्न.२ अ) भारतातील नवीन तंत्रज्ञानातील प्रगती आणि कृषिउत्पादनातील बदलाबाबत सविस्तर लिहा. गुण-१०
ब) थोडक्यात उत्तरे लिहा (कोणतेही दोन) गुण-१०
१) उत्पादन फलन
२) विस्तार मार्ग
३) केंद्र आणि राज्यातील कृषी विकासाबाबतचे सहसंबंध
- प्रश्न.३ अ) भारतातील कृषिसिंचनाची अवस्था स्पष्ट करून पाणलोट क्षेत्र विकास कार्यक्रमाचा आढावा लिहा. (गुण-१०)
ब) थोडक्यात उत्तरे लिहा. (कोणतेही दोन) गुण-१०
१) प्रिसिजन शेती
२) करार शेती
३) महामंडळ शेतीचा भारतातील विकास
- प्रश्न.४ अ) अन्नसुरक्षेसाठी भारत सरकारने कोणत्या उपाययोजना केलेल्या आहेत त्याचा सविस्तर आढावा लिहा. गुण-१०
ब) थोडक्यात उत्तरे लिहा. (कोणतेही दोन) गुण-१०
१) कृषिक्षेत्रावरील करार
२) कृषि निर्यात
३) सेंद्रिय शेती
- प्रश्न.५ अ) कृषि किंमत धोरणाचा सविस्तर आढावा लिहा. गुण-१०
ब) थोडक्यात उत्तरे लिहा. (कोणतेही दोन) गुण-१०
१) सहकारी बँकाचे कृषिविषयक कर्जे
२) जमिनीची धुप
३) नाबार्ड