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**M. Phil / Ph.D. Course Work Examination June / July – 2017**

**MARATHI (Paper – II)**

**Marathi Sahityatil Nave Pravah**

मराठी साहित्यातले नवे प्रवाह

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

सूचना: सर्व प्रश्न आवश्यक आहे.

- प्र. 1 अ) 1960 नंतर निर्माण झालेल्या विविध साहित्य प्रवाहांच्या निर्मितीची कारणे स्पष्ट करा. **10**
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) **10**
- 1) यशवंत मनोहर यांच्या काव्यप्रेरणा
  - 2) शंकर पाटील यांचे कथालेखन
  - 3) आदिवासी, कवयित्रींची कविता
- प्र.2 अ) नवकवितेची संकल्पना स्पष्ट करा. **10**
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) **10**
- 1) अरविंद गोखले यांच्या कथांचे स्वरूप
  - 2) नवसाहित्यातील बदलत्या जीवनजाणिवा
  - 3) भालचंद्र नेमाडे यांची कविता
- प्र.3 अ) दलित कवितेचे स्वरूप विशेष स्पष्ट करा. **10**
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) **10**
- 1) बाबुराव बागूल यांच्या कथेतून अभिव्यक्त होणारे महानगरीय जीवन
  - 2) वामन निंबाळकर यांची कविता
  - 3) ज्योती लांजेवार यांच्या कवितेतील स्त्री जीवन
- प्र.4 अ) स्त्रीवादाचे विविध प्रवाह स्पष्ट करा. **10**
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) **10**
- 1) मलिका अमर शेख यांची कविता
  - 2) सानियांच्या कादंबरीतील स्त्रीवादाचे स्वरूप
  - 3) कविता महाजन यांचे कादंबरी लेखन
- प्र.5 अ) आदिवासी कवितेचे स्वरूप व वैशिष्ट्ये स्पष्ट करा. **10**
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) **10**
- 1) डॉ.गोविंद गारे यांची कविता
  - 2) आदिवासी साहित्य प्रेरणा
  - 3) नजुबाई गावीत यांच्या कादंबरीतील आदिवासी विश्व

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**M.Phil / Ph.D. Course Work Examination June / July – 2017**

**MARATHI (Paper – III)**

**Marathi Sahityatil Navya Sankalpna (Old)**

मराठी साहित्यातील नव्या संकल्पना (Old)

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

सूचना: सर्व प्रश्न आवश्यक आहे.

- प्र.1 अ) साहित्यातील 'वाद संकल्पना' म्हणजे काय? स्पष्ट करा. 10  
 ब) लघुत्तरी प्रश्न (कोणतेही दोन) 10  
 1) 'संप्रदाय' आणि 'वाद' यातील भेद स्पष्ट करा.  
 2) अभिजातवादाची (Classicism) लक्षणे सांगा.  
 3) सौंदर्यवादाची वैशिष्ट्ये सांगा.
- प्र.2 अ) वास्तववादाची वैशिष्ट्ये सांगून त्याच्या मर्यादा स्पष्ट करा. 10  
 ब) लघुत्तरी प्रश्न (कोणतेही दोन) 10  
 1) वास्तववादाचे स्वरूप स्पष्ट करा.  
 2) वास्तववादाविषयीच्या विविध मतांचा परामर्श घ्या.  
 3) मराठीतील वास्तववादी साहित्य
- प्र.3 अ) अस्तित्ववाद म्हणजे काय? त्यामागे असलेले प्रमुख सूत्र कोणते? 10  
 ब) लघुत्तरी प्रश्न (कोणतेही दोन) 10  
 1) अस्तित्ववादी तत्त्वज्ञान  
 2) मराठीतील अस्तित्ववादी चित्रण  
 3) अस्तित्ववादाची वैचारिक भूमिका
- प्र.4 अ) आधुनिकतावाद आणि उत्तर आधुनिकतावाद ही संकल्पना स्पष्ट करा. 10  
 ब) लघुत्तरी प्रश्न (कोणतेही दोन) 10  
 1) आधुनिकतावादाचे विशेष सांगा.  
 2) आधुनिकता आणि मराठी कविता  
 3) भाषाविज्ञान व चिन्ह मीमांसा
- प्र.5 अ) रूपवाद म्हणजे काय? पाश्चात्य पार्श्वभूमी सांगा. 10  
 ब) लघुत्तरी प्रश्न (कोणतेही दोन) 10  
 1) इमॅन्युअल कांट  
 2) रूपवादी समीक्षा  
 3) कला आणि रूप

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**M.Phil / Ph.D. Course Work Examination June / July – 2017**

**MARATHI Paper – III (New) and Paper – IV (Old)**

**Madhyaugin Marathi Sahitya Ani Sanshodhan**

मध्ययुगीन मराठी साहित्य आणि संशोधन

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

सूचना: सर्व प्रश्न आवश्यक आहे.

- प्र.1 अ) मध्ययुगीन साहित्याची सामाजिक व सांस्कृतिक पार्श्वभूमी सांगा. **10**  
 ब) लघुत्तरी प्रश्न सोडवा. (तीन पैकी दोन) **10**  
 1) प्रबंधकाव्याची वैशिष्ट्ये सांगा.  
 2) मराठी राजवटीतील पत्ररूप गद्याचा परामर्ष घ्या.  
 3) मोरोपंतांच्या वाङ्मयातील शैली विशेष सांगा.
- प्र.2 अ) हस्तलिखिते, संहितानिश्चिती व कालनिर्णय या संदर्भातील अडचणी सांगा. **10**  
 ब) लघुत्तरी प्रश्न सोडवा. (तीन पैकी दोन) **10**  
 1) ओवीचे स्वरूप विशेष स्पष्ट करा.  
 2) मध्ययुगीन मराठीतील जैन वाङ्मयाचे योगदान साधार स्पष्ट करा.  
 3) महानुभाव पंथाचे तत्त्वज्ञान सांगा.
- प्र.3 अ) मराठी वाङ्मयातील प्रमुख संतचरित्राचा आढावा घ्या. **10**  
 ब) लघुत्तरी प्रश्न सोडवा. (तीन पैकी दोन) **10**  
 1) ख्रिस्ती वाङ्मयाचे मराठी वाङ्मयातील योगदान स्पष्ट करा.  
 2) मध्ययुगीन मराठीतील प्रमुख संत कवयित्रींच्या साहित्याचा परिचय करून द्या.  
 3) संत वाङ्मयातील संस्कारशीलतेवर प्रकाश टाका.
- प्र.4 अ) शाहिरी काव्याचे स्वरूप स्पष्ट करून आध्यात्मिक व प्रबोधनात्मक लावण्यांचा परिचय करून द्या. **10**  
 ब) लघुत्तरी प्रश्न सोडवा. (तीन पैकी दोन) **10**  
 1) पंडिती काव्यातील पांडित्य प्रदर्शन सोदाहरण स्पष्ट करा.  
 2) पंडिती काव्याच्या भाषाशैलीचे स्वरूप उदाहरणासह विशद करा.  
 3) धर्म व साहित्य यांच्यातील परस्परसंबंध स्पष्ट करा.
- प्र.5 अ) बखर म्हणजे काय? ते सांगून बखरीचे स्वरूप स्पष्ट करा. **10**  
 ब) लघुत्तरी प्रश्न सोडवा. (तीन पैकी दोन) **10**  
 1) आनंद संप्रदायाचे लेखनविशेष नोंदवा.  
 2) प्रवचन या रूपबंधावर प्रकाश टाका.  
 3) संत साहित्यातील लोकतत्त्वे उलगडून दाखवा.

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**M.Phil / Ph.D. Course Work Examination June / July – 2017**

**MARATHI Paper – III (New) and Paper – IV (Old)**

**Adhunik Marathi Sahitya Ani Sanshodhan**

आधुनिक मराठी साहित्य आणि संशोधन

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

सूचना: सर्व प्रश्न आवश्यक आहे.

- प्र.1 अ) खालील प्रश्नाचे सविस्तर उत्तर लिहा. 10  
 “आधुनिक महाराष्ट्राच्या वैचारिक जडणघडणीत मराठी निबंधाने फार मोठा हातभार लावलेला आहे” या विधानाचा परामर्श द्या.
- ब) थोडक्यात उत्तरे लिहा. (कोणतेही दोन) 10  
 1) मराठी लघूकथेचा विकासक्रम सांगा.  
 2) हरिभाऊ पूर्वकालीन मराठी कादंबरीचे स्वरूप स्पष्ट करा.  
 3) वाङ्मय इतिहासास हातभार लावणाऱ्या 20 व्या शतकातील मराठी नियतकालिकांच्या कार्याचे समालोचन करा.
- प्र.2 अ) खालील प्रश्नाचे सविस्तर उत्तर लिहा. 10  
 ‘1857 ते 1920 या कालखंडामध्ये सामाजिक सुधारणेच्या विविध चळवळी व वाङ्मय निर्मिती झाली’ ते स्पष्ट करा.
- ब) थोडक्यात उत्तरे लिहा. (कोणतेही दोन) 10  
 1) ना. सी. फडके यांच्या कादंबरी लेखनाचा परामर्श घ्या.  
 2) ‘क्रांतीवादी’ व राष्ट्रवादी कविता या नात्याने ‘रुद्रवीणा’ या काव्यसंग्रहाचे मूल्यमापन करा.  
 3) वसाहतोत्तर वादाची संकल्पना स्पष्ट करा.
- प्र.3 अ) खालील प्रश्नाचे सविस्तर उत्तर लिहा. 10  
 ‘गांधीवादी विचार सरणीचा प्रभाव 1920 ते 1945 या कालखंडातील वाङ्मय निर्मितीवर कशा स्वरूपाचा आहे ते स्पष्ट करा.
- ब) थोडक्यात उत्तरे लिहा. (कोणतेही दोन) 10  
 1) दलित साहित्यातील विद्रोह, नकार व दुःख यांचा आढावा घ्या.  
 2) ना. धो. महानोरांचे ग्रामीण साहित्यातील योगदान.  
 3) ‘नवकाव्याचे जनक’ म्हणून बा. सी. मर्ढेकर यांच्या काव्याचे मूल्यमापन करा.

- प्र.4 अ) खालील प्रश्नाचे सविस्तर उत्तर लिहा. 10  
स्वातंत्र्योत्तर काळातील मराठी कादंबरीत कोणकोणते प्रमुख प्रवाह आढळतात ते सांगा.
- ब) थोडक्यात उत्तरे लिहा. (कोणतेही दोन) 10  
1) प्रादेशिक कादंबरी कशी विकसित होत गेली ते सांगा.  
2) विसाव्या शतकातील कवयित्रींच्या कवितांचा आढावा घ्या.  
3) आंबेडकर वादाचे स्वरूप स्पष्ट करा.
- प्र.5 अ) खालील प्रश्नाचे सविस्तर उत्तर लिहा. 10  
वाङ्मयीन संशोधन आणि वाङ्मय इतिहास लेखन यांच्यात असलेले परस्परानुबंध स्पष्ट करून लेखकानुसार वाङ्मय इतिहास लेखन पध्दती स्पष्ट करा.
- ब) थोडक्यात उत्तरे लिहा. (कोणतेही दोन) 10  
1) स्वातंत्र्योत्तर कालखंडातील समीक्षा वाङ्मयाचे स्वरूप सांगा.  
2) भारतीय स्त्रीवाद  
3) मार्क्सवादी समीक्षा पध्दती

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**Ph.D. Course Work Examination June / July – 2017**  
**ENGLISH (Paper – II)**  
**Recent Trends in Critical Theories**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** “Feminist criticism today is the direct product of ‘women’s movement’ of the 1960s.” Elaborate your answer. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Gynocriticism
- 2) Feminist criticism and language
- 3) Feminism and psychoanalysis
- Q.2**    **A)** “Stylistics makes greater claims to scientific objectivity of literary texts.” Elaborate. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Scope of stylistics
- 2) Stylistics and linguistic features of a text
- 3) Applications of stylistics
- Q.3**    **A)** “New historicism is a reciprocal concern with the historicity of texts and textuality of history.” Illustrate your answer. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Cultural materialism
- 2) Cultural poetics
- 3) New historicism and Foucault
- Q.4**    **A)** Elucidate the perspective and procedure of ecocriticism. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Green studies
- 2) Role of ecocritics
- 3) Feminine conceptions of environment
- Q.5**    **A)** Explicate prime issues and concerns of lesbian and gay criticism. **10**
- B) Write short notes on any two of the following:** **10**
- 1) New aestheticism in practice
- 2) Cognitive poetics in practice
- 3) Queer theory

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**Ph.D. Course Work Examination June / July – 2017**  
**ENGLISH (Paper – III)**  
**Modern Trends in Drama Novel and Poetry**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Discuss major characteristics of Theatre of Absurd. **10**
- B) Write a note on any two of the followings:** **10**
- 1) Modernism
- 2) Imagism
- 3) The Symbolic Movement
- Q.2**    **A)** What are the major features of the Post Modernism? **10**
- B) Write a note on any two of the followings:** **10**
- 1) Modern Realistic Drama
- 2) Epic Theatre
- 3) Surrealism
- Q.3**    **A)** Sketch the character of Vladimir in *Waiting for Godot*. **10**
- B) Write a note on any two of the followings:** **10**
- 1) Yvette Pottier
- 2) Brecht's view of religion in *Mother Courage and Her Children*
- 3) Kattrin's dumbness
- Q.4**    **A)** Compare and contrast Stephen's relationship with his two friends Lynch and Cranly. **10**
- B) Write a note on any two of the followings:** **10**
- 1) Theme of *The Grass Is Singing*
- 2) Moses
- 3) Eilif
- Q.5**    **A)** Discuss *The waste Land* as a satire on material world. **10**
- B) Write a note on any two of the followings:** **10**
- 1) Use of myth in the poetry of Ted Hughes
- 2) Symbolism in "The Thought Fox"
- 3) Theme of "Apple Tragedy"

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**Ph.D. Course Work Examination June / July – 2017**

**HINDI (Paper – II)**

**Hindi Sahitya : Alochana Aur Vimarsh (New)**

हिंदी साहित्य: आलोचना और विमर्श (New)

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

सूचना: 1) सभी प्रश्न अनिवार्य हैं।

2) दाईं ओर लिखें अंक प्रश्नों के गुण दर्शाते हैं।

- प्र. 1 अ) आलोचना का स्वरूप स्पष्ट करते हुए मनोविश्लेषणवादी आलोचना पर प्रकाश डालिए। 10
- अथवा
- ‘साहित्य का समाजशास्त्र – एक अध्ययन’ – स्पष्ट कीजिए।
- ब) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए। 10
- 1) समाजशास्त्रीय आलोचना।
  - 2) अंत्यविव्यता।
  - 3) भाषा का वैज्ञानिक अध्ययन।
- प्र.2 अ) मार्क्सवाद का स्वरूप बताकर उसकी विशेषताएँ स्पष्ट कीजिए। 10
- अथवा
- ‘इतिहास दर्शन’ – साहित्य अध्ययन की विधा – विशद कीजिए।
- ब) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए। 10
- 1) मंडल आयोग और जागरण।
  - 2) भूमंडलीकरण।
  - 3) आधुनिकता बोध।
- प्र.3 अ) अस्तित्ववाद – एक विशिष्ट मतवाद – स्पष्ट कीजिए। 10
- अथवा
- दलित विमर्श की संकल्पना एवं महत्व विशद कीजिए।
- ब) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए। 10
- 1) ग्रामबोध।
  - 2) गांधीवाद : स्वरूप एवं संकल्पना।
  - 3) महानगरीय बोध।
- प्र.4 अ) उत्तर आधुनिकतावाद का हिंदी साहित्य पर प्रभाव – स्पष्ट कीजिए। 10
- अथवा
- हिंदी साहित्य में आदिवासी विमर्श नई संकल्पना विशद कीजिए।



- ब) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए। 10
- 1) अंबेडकरवाद।
  - 2) नवभांडवलवाद।
  - 3) मनोविश्लेषणवाद।
- प्र.5 अ) भारतीय स्वतंत्रता आंदोलन और हिन्दी साहित्य का संबंध – स्पष्ट कीजिए। 10  
अथवा  
'सांस्कृतिक अध्ययन' एक आवश्यकता विशद कीजिए।
- ब) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए। 10
- 1) तुलनात्मक अध्ययन—स्वरूप प्रविधि।
  - 2) धुमंतू जातियों का जागरण।
  - 3) स्त्री विमर्श।

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**Ph.D. Course Work Examination June / July – 2017**

**HINDI (Paper – III)**

**Hindi Sahitya Vidha – Hindi Katha Sahitya (New)**

हिंदी साहित्य विधा – हिंदी कथा साहित्य (New)

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

सूचना: 1) किन्हीं चार प्रश्नों के उत्तर लिखिए।  
2) सभी प्रश्नों को समान अंक हैं।

- |       |   |    |
|-------|---|----|
| प्र.1 | कहानी की परिभाषा और उसके स्वरूप को स्पष्ट करते हुए कहानी के प्रकारों का परिचय दीजिए।  | 25 |
| प्र.2 | चरित्र-चित्रण की कसौटियों के आधार पर 'सोना माटी' उपन्यास के प्रमुख पात्रों की समीक्षा कीजिए।  | 25 |
| प्र.3 | 'कलिकथा: वाया बाईपास' उपन्यास के वस्तु-विन्यास की समीक्षा कीजिए।  | 25 |
| प्र.4 | यशपाल की प्रतिनिधी कहानियों के उद्देश्यों की अवधारणाओं को स्पष्ट कीजिए।   | 25 |
| प्र.5 | राजेंद्र यादव की प्रतिनिधी कहानियों में अंकित सामाजिक समस्याओं का चित्रण कीजिए।   | 25 |
| प्र.6 | निम्नलिखित में से <u>किन्हीं दो</u> पर टिप्पणियाँ लिखिए।<br>अ) हिंदी उपन्यास का प्रेमचंद युग।<br>ब) स्वातंत्र्योत्तर हिंदी कहानी।<br>क) श्रीलाल शुक्ल के 'राग दरबारी' उपन्यास में अंकित व्यंग्य।<br>ड) मुद्राराक्षस द्वारा संपादित दलित कहानियों में अंकित देश-काल वातावरण। | 25 |

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**Ph.D. Course Work Examination June / July – 2017**  
**PHYSICS (Paper – II)**  
**Recent Trends in Physics**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** Method of determination of lattice parameters for cubic, tetragonal, hexagonal crystal systems. **10**
- B) Write a short note on any two:** **10**
- 1) Concept of calculation of texture analysis.
- 2) Data processing and refinement.
- 3) Powder diffraction method.
- Q.2**    **A)** Principle of FESEM and advantages over SEM and TEM microscopy. **10**
- B) Write a short note on any two:** **10**
- 1) Concept of electron diffraction
- 2) Applications of FE-SEM microscopy
- 3) Principle of image formation
- Q.3**    **A)** Defined Quantum Harmonic Oscillator? Explain diatomic molecule as Quantum Harmonic Oscillator. **10**
- B) Write a short note on any two:** **10**
- 1) Infrared Absorption spectroscopy
- 2) Application of IR to organic molecules
- 3) Advantages of FTIR instrumentation.
- Q.4**    **A)** Determination of optical bandgap using absorption spectroscopy. **10**
- B) Write a short note on any two:** **10**
- 1) Concept of absorption of light
- 2) Types of transitions
- 3) Effect of conjugation
- Q.5**    **A)** Explain the contact mode and tapping mode using atomic force microscopy. **10**
- B) Write a short note on any two:** **10**
- 1) Magnetic force microscope
- 2) Electrostatic force microscope
- 3) Depth profiling using XPS

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**Ph.D. Course Work Examination June / July – 2017**  
**PHYSICS Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in Physics: Solar Cells and Super Capacitor**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Define solar cell? Explain short circuit current ( $I_{sc}$ ) and open circuit voltage ( $V_{oc}$ ) using I-V characteristics curve. **10**
- B) Write short note on any two:** **10**
- 1) Solar radiations and solar spectrum
  - 2) P-N hetero and homojunctions
  - 3) Internal photon conversion efficiency (IPCE)
- Q.2 A)** Explain working of GaAs based solar cells and CuInSe<sub>2</sub> based solar cell and difference between them. **10**
- B) Write short note on any two:** **10**
- 1) Photoelectrochemical cells
  - 2) Limitation of dye sensitized solar cells
  - 3) Advantages of metal-semiconductor solar cells
- Q.3 A)** Write basic concept and working and materials of dye sensitized solar cells. **10**
- B) Write short note on any two:** **10**
- 1) Silicon solar cells
  - 2) Applications of solar cells
  - 3) Photovoltaic effect
- Q.4 A)** Explain different types of super capacitors. **10**
- B) Write short note on any two:** **10**
- 1) Pseudocapacitors super capacitors
  - 2) Disadvantages of electrochemical double layer
  - 3) Hybrid super capacitors
- Q.5 A)** Discuss cathodic and anodic electrode materials, their preparation and applications. **10**
- B) Write short note on any two:** **10**
- 1) Applications of super capacitors
  - 2) Carbon material based super capacitors
  - 3) Metal oxide based super capacitors

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**Ph.D. Course Work Examination June / July – 2017**  
**ELECTRONICS (Paper – II)**  
**Recent Trends in Electronics (Old)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** What is humidity? What is its role in agriculture? Explain the role of instrumentation in agriculture. **10**
- B) Answer Any Two:**
- 1) Explain the different types of pH electrodes available in the market? **05**
  - 2) Explain the principle and working of O<sub>2</sub> sensor. **05**
  - 3) Explain the application of wired network for green house. **05**
- Q.2 A)** Discuss development of VI using GUI with an example. **10**
- B) Answer Any Two:**
- 1) Explain the construction and working of PC based temperature control system. **05**
  - 2) Describe the working principle of SY-HS 220. **05**
  - 3) Explain the block diagram and architecture of virtual instrumentation. **05**
- Q.3 A)** Give the comparison between virtual instrumentation and traditional instrumentation and explain advantages of virtual instrumentation. **10**
- B) Answer Any Two:**
- 1) Explain data flow techniques in VI. **05**
  - 2) Describe graphical programming in data-flow. **05**
  - 3) What is LABVIEW? How LABVIEW can be used for agriculture? **05**
- Q.4 A)** What are signals? Explain different types of signals and represent them in mathematical form. **10**
- B) Answer Any Two:**
- 1) Derive the mathematical model of a mechanical system. **05**
  - 2) With an example explain modeling of hydraulic system. **05**
  - 3) Write a note on liner and non-linear systems. **05**
- Q.5 A)** Explain the continuous and discrete time signals with mathematical expressions. **10**
- B) Answer Any Two:**
- 1) Explain briefly complex exponential sinusoidal signals. **05**
  - 2) Write a short note on fluid systems. **05**
  - 3) Explain how the Fourier series can be used to analyze the continuous time signal. **05**

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**Ph.D. Course Work Examination June / July – 2017**  
**ELECTRONICS (Paper – II)**  
**Recent Advances in Electronics (New)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** Draw a neat block diagram and explain the data flow modes of ARM core. **10**
- B) Answer Any Two:**
- 1) Explain in detail the register file of ARM processor. **05**
  - 2) What is CPSR? Discuss the format of CPSR register. **05**
  - 3) Write short notes on different processor modes of ARM controller. **05**
- Q.2 A)** Explain the block diagram of LPC2148 microcontroller. **10**
- B) Answer Any Two:**
- 1) What is UART? Discuss about functional features of UART of LPC 2148. **05**
  - 2) Explain the functional features of Real time clock (RTC) of LPC 2148 **05**
  - 3) What is meant by SPI and SSP? Discuss with respect to LPC 2148. **05**
- Q.3 A)** Explain about sensor network Architecture in detail. **10**
- B) Answer Any Two:**
- 1) Mention the specifications of WSN devices. **05**
  - 2) Discuss about the on-chip resources of the Zigbee. **05**
  - 3) List out the features of tiered Architectures in Sensor Networks. **05**
- Q.4 A)** Explain about the features and applications of MOS Resistor, MOS capacitor and MOS Diode. **10**
- B) Answer Any Two:**
- 1) Compare passive and active current mirrors. **05**
  - 2) Narrate about voltage reference and where it is used? **05**
  - 3) Write circuit diagram of CMOS OPAMP. **05**
- Q.5 A)** Explain about the architecture of PSOC with a neat diagram. **10**
- B) Answer Any Two:**
- 1) Discuss the dynamic reconfiguration cores in brief. **05**
  - 2) Mention about the various I/O ports with respect to SOC. **05**
  - 3) Write the block diagram of Cypress PSOC. **05**

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**Ph.D. Course Work Examination June / July – 2017**  
**ELECTRONICS (Paper – III)**  
**Modern Topics in Electronics (Old)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** Briefly explain the ARM core current program status register highlighting the processor modes. **10**
- B) Answer any two of the following:** **10**
- 1) Give a short note on types of embedded system peripherals.
  - 2) What is hardware extension? Why is it necessary? Explain any one type of hardware extension around ARM core.
  - 3) Explain briefly the ARM7 three stage pipeline mechanism.
- Q.2 A)** Explain the memory map of LPC2378 highlighting different regions. **10**
- B) Answer any two of the following:** **10**
- 1) Explain the mechanism involved when a processor encounters an exception.
  - 2) Write a short note on general purpose DMA controller in LPC2378.
  - 3) What are the features of CAN controller in LPC2378?
- Q.3 A)** Explain in detail the Zigbee architecture highlighting the modes of its operation. **10**
- B) Answer any two of the following:** **10**
- 1) What are the characteristics of wireless sensor networks?
  - 2) Explain the design abstraction ladder for digital systems.
  - 3) Explain transport and inertial delays in digital design.
- Q.4 A)** Explain in detail along with necessary flowchart, the HDL based design flow of a digital system design. **10**
- B) Answer any two of the following:** **10**
- 1) Write a short on Gajski-Kuhn chart.
  - 2) Give an overview of floor planning methods.
  - 3) Define an entity in VHDL. Give the template of a VHDL programme.
- Q.5 A)** Discuss design issues of mixed signal VLSI. **10**
- B) Answer any two of the following:** **10**
- 1) Give the VHDL code for ripple carry full adder.
  - 2) Critically compare the architecture of CPLD and FPGA.
  - 3) Write a short note on digital and analog blocks in PSoC.

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**Ph.D. Course Work Examination June / July – 2017**  
**ELECTRONICS Paper – III (New) and Paper – IV (Old)**  
**Architecture of Wireless Sensor Networks**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** With required diagram explain the single node hardware and software architecture of WSN. **10**
- B) Answer Any Two:** **10**
- 1) What is duty cycle and how it is calculated in WSN?
  - 2) Discuss on any 3 applications of WSN.
  - 3) Discuss on different types of Wireless networking protocols for sensor network.
- Q.2 A)** Explain AVR microcontroller based WSN system for water quality parameter monitoring of fish ponds in Aquaculture. **10**
- B) Answer Any Two:** **10**
- 1) Explain various services offered by localization.
  - 2) List the types of Random Access protocols and Collision Resolution protocols.
  - 3) Explain in brief the four layers involved in SMS?
- Q.3 A)** Explain the LEACH routing with the help of neat diagram. Give its advantages and disadvantages. **10**
- B) Answer Any Two:** **10**
- 1) What is meant by self-jamming?
  - 2) List the capabilities of third generation systems.
  - 3) List the various properties of ISM band.
- Q.4 A)** Design a suitable topology control algorithm that minimizes the maximum the power consumed by the nodes. **10**
- B) Answer Any Two:** **10**
- 1) Write a note on the classifications of the services of wireless security system.
  - 2) Define the hardware and software tools used in WSN.
  - 3) What are the implementation issues of WSN in environmental monitoring?
- Q.5 A)** Is spread spectrum modulation schemes are followed in WSN – justify your answer. **10**
- B) Answer Any Two:** **10**
- 1) What is Data-Centric Network? Explain with suitable example.
  - 2) What are the different types of interaction pattern between sources and sinks in WSN? Explain.
  - 3) Briefly explain, what is Single Hop and Multiple Hop?



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**Ph.D. Course Work Examination June / July – 2017**  
**ZOOLOGY Paper – II**  
**Recent Trends in Zoology (New)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions:** 1) *All questions are compulsory.*  
 2) *Figures on right hand side indicates marks.*  
 3) *Drew labeled diagram wherever necessary.*

- Q.1**    **A)** Describe different methods of centrifugation; explain in detail the process and purpose of ultracentrifugation. **10**
- B) Write short notes on (any two):** **10**
- 1) Trap camera and its uses in wild life conservation
- 2) Activation of Vit. D
- 3) T-Cells
- Q.2**    **A)** Describe what are green house gases, how they act for change in global environment. **10**
- B) Write short notes on (any two):** **10**
- 1) Structure of *Trichomonas vaginalis*
- 2) Strategies for forest conservation
- 3) Cryopreservation of cattle sperms
- Q.3**    **A)** Classify the carbohydrates. Explain quantitative estimation of Glucose. **10**
- B) Write short notes on (any two):** **10**
- 1) Electron gun is SEM
- 2) Collar tagging in Lion for its conservation
- 3) Restriction enzymes
- Q.4**    **A)** Explain Cellular basis of pathogenesis, symptoms and treatment of Swine flu. **10**
- B) Write short notes on (any two):** **10**
- 1) Detection of amino acids by chromatography
- 2) Steroidal hormones and their functions
- 3) Different strains of Chikungunya
- Q.5**    **A)** Explain physiological and molecular basis of taxonomy. **10**
- B) Write short notes on (any two):** **10**
- 1) HPTLC
- 2) Applications of Transmission Electron Microscopy in taxonomy
- 3) Structure of scolex of *Echinococcus granulosus*

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**Ph.D. Course Work Examination June / July – 2017**  
**ZOOLOGY (Paper – III)**  
**Modern Topics in Zoology (Old)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** Write an essay on Role of mitochondria in cellular energy transaction. **10**
- B) Write short notes on any two:** **10**
- 1) Onchogene
- 2) Chloroplast
- 3) Angiogenesis
- Q.2**    **A)** What is selection? Give the details of gametic and zygotic selection. **10**
- B) Write short notes on any two:** **10**
- 1) Gene Pool
- 2) Migration
- 3) Qualitative trait
- Q.3**    **A)** Explain the role of soil microorganisms in Bioremediation of soil. **10**
- B) Write short notes on any two:** **10**
- 1) Acid rain
- 2) Role of chlorofluoro carbon in Ozone depletion.
- 3) Ultraviolet light
- Q.4**    **A)** Describe life cycle, pathogenicity and control of *wuchereria bancrofti*. **10**
- B) Write short notes on any two:** **10**
- 1) Dengue fever
- 2) Giardiasis
- 3) *Aedes aegypti*
- Q.5**    **A)** What is wild life? Give the details of wild life conservation. **10**
- B) Write short notes on any two:** **10**
- 1) Cryopreservation of Gametes
- 2) Indian Tiger
- 3) Taxonomic keys

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**Ph.D. Course Work Examination June / July – 2017**  
**ZOOLOGY Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in Zoology**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

- Instructions:** 1) *All questions are compulsory.*  
 2) *All questions carry equal marks.*  
 3) *Draw neat labeled diagrams wherever necessary.*

- Q.1**    **A)** Describe the structure and functions of Thyroid gland. **10**
- B) Write short notes on any two:** **10**
- 1) Structure of steroid hormone and their formation
- 2) Role of parathormone in calcium metabolism
- 3) Histological structure of Adrenal medulla
- Q.2**    **A)** Give an account of preparation and management of nursery ponds. **10**
- B) Write short notes on any two:** **10**
- 1) Characteristic features of cultivable species in fresh water fish culture
- 2) Monosex culture
- 3) Chinese hatchery
- Q.3**    **A)** Explain in detail the general properties of Enzymes. **10**
- B) Write short notes on any two:** **10**
- 1) Biotransducer
- 2) Ethanol fermentation
- 3) Applications of enzymes
- Q.4**    **A)** Discuss the mutation theory of evolution and add note on importance of Mutations in evolution. **10**
- B) Write short notes on any two:** **10**
- 1) Germplasm theory
- 2) Hybrid speciation
- 3) Harmful bacteria
- Q.5**    **A)** What is cellular differentiation? Explain its mechanisms. **10**
- B) Write short notes on any two:** **10**
- 1) Types of Homeotic genes
- 2) Properties of stem cells
- 3) Transgenesis

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**Ph.D. Course Work Examination June / July – 2017**  
**GEOGRAPHY (Paper – II)**  
**Recent Trends in Geography**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** Describe the indicators of development of Geography. **10**
- B) Short Answer types (any two)** **10**
- 1) Nature of Ancient Geography
- 2) Geography and Scientific Revolution
- 3) Contribution of Bernhard Varenius
- Q.2**    **A)** Discuss the logical positivism and Geography. **10**
- B) Short Answer types (any two)** **10**
- 1) Behavioral Geography
- 2) Homothetic approach in Geography
- 3) Marxist stream in Geography
- Q.3**    **A)** Explain the co-relation of research and model in Geography. **10**
- B) Short Answer types(any two)** **10**
- 1) Geographical Laws
- 2) William Morris Davis
- 3) Concept of Regionalization
- Q.4**    **A)** Discuss the application of Geography in Regional Planning and Planning of Health Care. **10**
- B) Short Answer types (any two)** **10**
- 1) Geographical Condition and Industrial Development
- 2) Spatial inequality and Geography
- 3) Development of Tourism Industry in India
- Q.5**    **A)** “Indian Population is Resources or Calamity” Discuss. **10**
- B) Short Answer types (any two)** **10**
- 1) Human Resource Development Index
- 2) Disputes: Nature and Man
- 3) Halford J. Mackinder

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**Ph.D. Course Work Examination June / July – 2017**  
**GEOGRAPHY (Paper – III)**  
**Modern Topics in Geography (Old)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions:** 1) *Each question is compulsory.*  
 2) *Solve questions serially.*  
 3) *Figures to the right indicate full marks.*

- Q.1**    **A)** Describe the environmental changes caused by disposal of waste material. **10**
- B) Write short answer: (any two)** **10**
- 1) What is desertification?
- 2) What are green house gases? Enlist.
- 3) What is Ozone depletion?
- Q.2**    **A)** What is flood? Explain the flood management measures. **10**
- B) Write short answer: (any two)** **10**
- 1) What is Cyclone?
- 2) Define disaster management.
- 3) What is landslide?
- Q.3**    **A)** What are merits and demerits of quantitative methods in geography? **10**
- B) Write short answer: (any two)** **10**
- 1) What are paradigms in Geography?
- 2) What is locational analysis in Geography?
- 3) What is spatial analysis?
- Q.4**    **A)** Describe the advantages of GIS. **10**
- B) Write short answer: (any two)** **10**
- 1) What are the components of GIS?
- 2) What is G.P.S.?
- 3) Define raster and vector data.
- Q.5**    **A)** Write an essay on application of G.P.S. in geographical research. **10**
- B) Write short answer: (any two)** **10**
- 1) What is Salinization?
- 2) Define Gender Geography.
- 3) Define Active and Passive Remote sensing.

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**Ph.D. Course Work Examination June / July – 2017**  
**GEOGRAPHY Paper – III (New) and Paper – IV (Old)**  
**Recent Trends in Economic Geography**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** Explain Alfred Weber's Industrial Location theory. **10**
- B) Write short answer on any two of the following:** **10**
- 1) Explain the classification of economic activities.
  - 2) Explain behavioural location theory.
  - 3) Describe different approaches to the study of economic Geography.
- Q.2 A)** Give a brief account of types of resources. **10**
- B) Write short answer on any two of the following:** **10**
- 1) Write a geographical essay on concept of sustainable development.
  - 2) Explain the Reilly Gravitational model.
  - 3) Write a note on resource utilization and environmental degradation.
- Q.3 A)** Explain Von Thunen's theory of Land Utilization. **10**
- B) Write short answer on any two of the following:** **10**
- 1) Explain different approaches to promote the economic development.
  - 2) State the concept of OPEC.
  - 3) Explain the importance of Economic Geography.
- Q.4 A)** Explain Ullman's tried connectivity and accessibility of transport network. **10**
- B) Write short answer on any two of the following:** **10**
- 1) State the concept of WTO.
  - 2) Explain importance of e-mail shopping.
  - 3) Explain multinuclear theory.
- Q.5 A)** Explain difference between wholesale and retail trade. **10**
- B) Write short answer on any two of the following:** **10**
- 1) Explain the concept of EEC.
  - 2) Write on Sky Shopping.
  - 3) Write a note on methods of measurement of economic development.

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**Ph.D. Course Work Examination June / July – 2017**  
**GEOGRAPHY Paper – III (New) and Paper – IV (Old)**  
**Recent Trends in Population Geography**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Explain approaches to the study of population geography with special reference to recent trends. **10**
- B) Write short notes on any two:** **10**
- 1) Describe relationship of population geography with other disciplines.
  - 2) Explain significance of the study of population geography.
  - 3) What is crude birth rate?
- Q.2 A)** Write in details of types of mortality rates. **10**
- B) Write short notes on any two:** **10**
- 1) Explain the crude death rate.
  - 2) What is longevity of life?
  - 3) Explain the fertility ratio.
- Q.3 A)** Explain the techniques of analysis in the study of population geography. **10**
- B) Write short notes on any two:** **10**
- 1) Write the types of sex ratio.
  - 2) Discuss on data source.
  - 3) Explain the age and sex composition.
- Q.4 A)** Explain critically the Malthusian theory of population geography. **10**
- B) Write short notes on any two:** **10**
- 1) Discuss on optimum population theory.
  - 2) Write the space and time dimension in demographic transition.
  - 3) State the reproduction of degree of replacement.
- Q.5 A)** Describe the demographic transition theory. **10**
- B) Write short notes on any two:** **10**
- 1) What is the recent nature of population geography?
  - 2) Explain the difference between birth rate and death rate.
  - 3) How calculate the specific mortality rate?

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**COMPUTER SCIENCE (Paper – III)**  
**Artificial Intelligence (New)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** What is Artificial Intelligence? Describe the applications of Artificial Intelligence. **10**
- B) Answer Any Two:** **10**
- 1) Explain the challenges before Artificial Intelligence.
- 2) Solve the Water Jug Problem using State Space Search approach.
- 3) Explain the Un-informed (Blind) Search Techniques.
- Q.2**    **A)** Illustrate how knowledge can represent in Artificial Intelligence? **10**
- B) Answer Any Two:** **10**
- 1) Describe the importance of Natural Language Processing.
- 2) Explain the Syntactic representations.
- 3) Discuss Propositional Logic and Predicate Logic.
- Q.3**    **A)** Gives the difference between Procedural verses Declarative Knowledge? **10**
- B) Answer Any Two:** **10**
- 1) Explain what is Understanding in AI?
- 2) Explain the Discourse and Pragmatic Processing.
- 3) Discuss the Semantic Analysis.
- Q.4**    **A)** Explain the role of Genetic Algorithm in Artificial Intelligence? **10**
- B) Answer Any Two:** **10**
- 1) Describe the working of knowledge Acquisition.
- 2) Explain the Expert System Shell.
- 3) Discuss the Case-based Reasoning.
- Q.5**    **A)** Explain the Computable functions and Predicates in AI? **10**
- B) Answer Any Two:** **10**
- 1) Describe the Psychological Modelling in AI.
- 2) Explain the Advantages of Expert System.
- 3) Discuss the Syntactic Processing.



Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**COMPUTER SCIENCE (Paper – II) (New) and (Paper – III) (Old)**  
**Modern Topics in Computer Science**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 03.00 PM to 06.00 PM

***Instructions: All questions are compulsory.***

- Q.1 Solve the following:**
- A)** What are the advantages of neural networks over conventional computers? **10**
- B) Answer Any Two:** **10**
- 1) Write a note on Adaptive Networks.
  - 2) Distinguish between a feed forward network and a recurrent network.
  - 3) What are the benefits to have smallest number of neurons in the network?
- Q.2 Attempt the following:** **10**
- A)** What are Fuzzy sets? List the Fuzzy set properties?
- B) Answer Any Two:** **10**
- 1) What are Fuzzy relations? List the operations on fuzzy relations.
  - 2) Explain the steps in designing a fuzzy control system.
  - 3) Define fuzzy application with a suitable example.
- Q.3 Attempt the following:** **10**
- A)** Consider two raster systems with the resolutions of 640 x 480 and 1280 x 1024.
- 1) How many pixels could be accessed per second in each of these systems by a display controller that refreshes the screen at a rate of 60 frames per second?
  - 2) What is the access time per pixel in each system?
- B) Answer Any Two:** **10**
- 1) What is ray tracing? Explain suitable algorithm for ray tracing with proper illustration.
  - 2) Develop the Bresenham's line drawing to draw lines of any slope. Compare this with the DDA Algorithm.
  - 3) Explain the merits and demerits of DVST.
- Q.4 Attempt the following:**
- A)** What is recurrence relation? Explain with suitable example? Enlist different methods to solve the recurrences. **10**

- B) Answer Any Two:** **10**
- 1) What are asymptotic notations? Enlist different notations used with their bounds?
  - 2) Write and explain algorithms for finding minimum weighted spanning tree with illustration.
  - 3) Compare all pair shortest path to dijkstra's algorithm for shortest path computation.

**Q.5 Attempt the following:**

- A)** Discuss briefly the difference between RMI and RPC? **10**
- B) Answer Any Two:** **10**
- 1) Difference between two version locking and hierarchical locking?
  - 2) What is OMG? Explain with neat sketch CORBA architecture.
  - 3) Explain the role of TTL in the TCP/IP protocol.

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**Ph.D. Course Work Examination June / July – 2017**  
**COMPUTER SCIENCE Paper – III (New) and Paper – IV (Old)**  
**Digital Image Processing**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

**Q.1 A)** Define sampling and quantization of an image. Explain the steps involved in Histogram equalization. **10**

**B)** Obtain the filtered image for the following image using 3x3 neighborhood averaging, assuming zero padding. **10**

$$g(m, n) = \begin{bmatrix} 12 & 10 & 8 & 4 \\ 8 & 14 & 6 & 9 \\ 5 & 9 & 13 & 8 \\ 14 & 5 & 7 & 9 \end{bmatrix}$$

**Q.2 A)** What are the difference between image restoration and image enhancement? Explain their common factors. **10**

**B)** A blur filter  $h(m, n)$  is given by **10**

$$h(m, n) = \begin{bmatrix} 0 & 0.1 & 0.1 & 0 \\ 0.1 & 0.1 & 0.1 & 0.1 \\ 0.05 & 0.1 & 0.1 & 0.05 \\ 0 & 0.05 & 0.05 & 0 \end{bmatrix}$$

Obtain the deblur filter by using inverse filter approach.

**Q.3 A)** What is image compression? Explain error-free compression. **10**

**B)** For the image given below, compute the degree of compression that can be achieved by using Huffman coding of find values. **10**

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

**Q.4 A)** Explain the 'fidelity criterion' for lossy image compression and transform based image compression technique. **10**

- B) The original and the reconstructed image are given below. Calculate the Peak Signal-to-Noise Ratio (PSNR) expressed in decibel. 10

$$\text{Original image} = \begin{bmatrix} 1 & 8 & 6 & 6 \\ 6 & 3 & 11 & 8 \\ 8 & 8 & 9 & 10 \\ 9 & 10 & 10 & 7 \end{bmatrix},$$

$$\text{Reconstituted image} = \begin{bmatrix} 2 & 8 & 8 & 7 \\ 6 & 3 & 12 & 8 \\ 5 & 4 & 9 & 1 \\ 15 & 9 & 11 & 9 \end{bmatrix}$$

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

**20**

- Hit-or-Miss transformation
- Segmentation Based on Morphological Watersheds
- Regional and Boundary Descriptors

Seat No.	
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**M. Phil / Ph.D. Course Work Examination June / July – 2017**  
**CHEMISTRY (Paper – II)**  
**Recent Trends in Physical Chemistry**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

- Instructions:** 1) *All questions are compulsory.*  
 2) *All questions carry equal marks and figures to the right indicate marks.*  
 3) *Neat and labeled diagrams should be drawn wherever necessary.*  
 4) *Use of calculator and log table is allowed.*

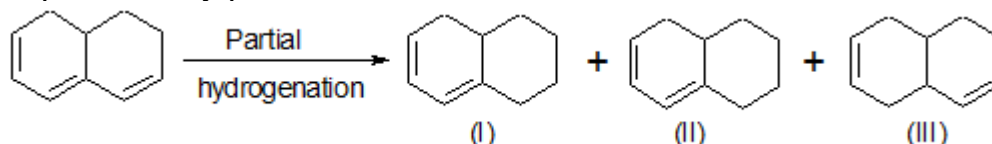
- Q.1 A)** Describe experimental procedure used in preparation of thin films using Langmuir-Blodgett technique. Discuss applications of these films in fabrication of devices. **10**
- B) Answer any two of the following.** **10**
- 1) Describe with the help of a circuit diagram the characteristics of P-N-P transistors.
  - 2) What is rectifier? Explain how can P-N junction diode serve as a rectifier for alternating current.
  - 3) Discuss general procedure used in preparation of thin films using spin coating and sol-gel method.
- Q.2 A) Answer the following:** **10**
- 1) How spin-spin coupling takes place in  $^1\text{H}$  NMR Spectroscopy?
  - 2) Factors influencing chemical shift in NMR.
- B) Attempt any two of the following:** **10**
- 1) Finger print region and group frequency region.
  - 2) Mass fragmentation pattern in mass spectrum.
  - 3) Explain the difference between 2D-NMR and proton NMR.
- Q.3 A)** Give a brief comment on the relationship between the structure and the thermodynamic properties of simple liquids. **10**
- B) Write notes on any two of the following.** **10**
- 1) Method of determination of structure of liquids using X-ray scattering technique.
  - 2) Electronic heat capacity of metals.
  - 3) Thermal properties of crystalline solids.

- Q.4 A)** What is autocatalysis? Give some examples. Deduce kinetic equation for such reactions. **10**
- B) Write notes on any two of the following. 10**
- 1) Micellar catalysis.
  - 2) Phase transfer catalysis.
  - 3) Catalytic promoters and poisons.
- Q.5 A)** Give the meaning of distortion and orientation polarization of liquids. Discuss variation of total polarization of polar and non-polar liquids with temperature. **10**
- B) Answer any two of the following: 10**
- 1) Method of determination of excess volume of liquid mixture.
  - 2) Structure of water near the surface.
  - 3) Intermolecular forces in liquid mixtures.



$^1\text{H NMR}$  ( $\delta$ , PPM): 2.5 (s) 3H  
 7.3 (d)  $J=8\text{H}_2$ , 2H  
 7.9 (d)  $J=8\text{H}_2$ , 2H  
 Mass (m/2): 154/156 (3:1)  
 139/141 (3:1)  
 111/113 (3:1)

- 3) The following triene on partial hydrogenation gives three products. How uv spectroscopy and Woodward Fieser rules will help to identify products?



**Q.4 A)** Describe Woodward and Prevost dihydroxylation with suitable examples. **10**

**B) Solve any two of the following:** **10**

- 1) Assign the structure for compound showing following data. M.F.

$\text{C}_{12}\text{H}_{16}\text{O}_2$   
 IR ( $\nu$ ): 1666, 2900  $\text{cm}^{-1}$ .  
 $^1\text{H NMR}$  ( $\delta$ , PPM): 1.4 (s) 9H  
 3.8 (s) 3H  
 6.9 (d) 2H  
 7.8 (d) 2H

Mass (m/2): 135, 107

- 2) Assign the structure for compound showing following data. M.F.

$\text{C}_4\text{H}_8\text{O}_2$   
 uv:  $\lambda_{\text{max}}$  210 nm  
 IR: 2984, 1741  $\text{cm}^{-1}$ .  
 $^1\text{H NMR}$  ( $\delta$ , PPM): 1.3 (f) 15mm  
 2.05 (s) 15mm  
 4.2 (q) 10mm

$^{13}\text{C NMR}$ : 14, 20, 60, 170

Mass (m/2): 88, 43, 29

- 3) Describe stereochemistry involved in  $\text{S}_{\text{N}}\text{i}$  reaction with suitable examples.

**Q.5 A)** Describe stereospecific and stereoselective reactions with suitable examples. **10**

**B) Solve any two of the following:** **10**

- 1) What is meant by COSY experiments? Explain.  
 2) Discuss the prochirality of citric acid.  
 3) Write note on umpolung concept.



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**M.Phil / Ph.D. Course Work Examination June / July – 2017**  
**CHEMISTRY (Paper – III)**  
**Modern Topics in Physical Chemistry**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

- Instructions:** 1) **All questions are compulsory.**  
 2) **Use of scientific calculator is allowed.**  
 3) **Neatly drawn and labeled diagrams are necessary.**

- Q.1 A) Answer any two: 10**  
 1) Draw the crystal structures for NaCl and explain how Na<sup>+</sup> and Cl<sup>-</sup> ions are packed.  
 2) Discuss band theory of ferromagnetism.  
 3) Write short note on polymorphism.
- B) What are Zeolites? Discuss synthesis and microporous structure of Zeolite aluminosilicate. 10**
- Q.2 A) Discuss the factors which are affecting solid state reactions. 10**
- B) Answer Any Two: 10**  
 1) How does the paramagnetic susceptibility of materials vary with temperature?  
 2) What are hard and soft magnetic materials?  
 3) Discuss electrical conductivity of zinc ferrite.
- Q.3 A) What is Bragg's condition? Derive and use the condition for diffraction of X-ray from lattice plane. Describe application X-ray diffractometer method for determining lattice constant. 10**
- B) Answer Any Two: 10**  
 1) Write note on law of symmetry.  
 2) A sodium chloride crystal used to measure the wave length of a source of X-ray. The first order diffraction angle for the (111) plane spacing of chlorine is 5.2°. What is the wave length if lattice constant is 5.63 Å.  
 3) Discuss crystal systems and Bravais space lattices.

- Q.4 A)** Give the basic principle of tracer technique? What is direct isotope dilution method? Explain application of this method for determination of blood volume. **10**
- B) Answer Any Two:** **10**
- 1) Explain the meaning of radioactive equilibrium, secular equilibrium and Transient equilibrium.
  - 2) Discuss basic principle and applications of radio chromatography.
  - 3) Write note on mechanism of Neutron activation Analysis.
- Q.5 A)** Discuss use of Dynamic Light Scattering Technique to characterize nanoparticles. **10**
- B) Answer Any Two:** **10**
- 1) Indicate meaning of morphology of nanostructured materials. Give a short review on the techniques used for examining morphology of materials.
  - 2) Describe sol-gel method of preparation of metal oxide nanoparticles.
  - 3) Discuss synthesis CdS nanoparticles by electrostatic entrapment.

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**M.Phil / Ph.D. Course Work Examination June / July – 2017**  
**CHEMISTRY (Paper – III)**  
**Modern Topics In Organic Chemistry**

Day &amp; Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions: All questions are compulsory.**

**Q.1 A)** Discuss Sommelet reaction with mechanism. Give its applications. **10**

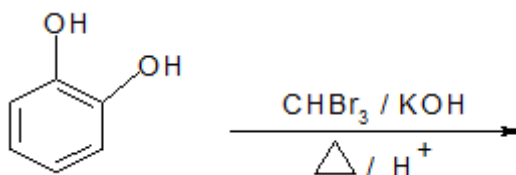
**B) Answer Any Two:** **2X5**

- 1) Give the mechanism of Knoevenagel reaction in the synthesis of  $\alpha, \beta$ -unsaturated acid.
- 2) Write an account of Wolff-Kishner reduction.
- 3) Formulate the mechanism of Photoreduction.

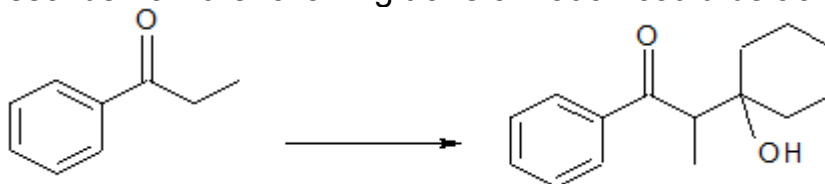
**Q.2 A)** Describe application of Heck reaction in C-C bond formation. **10**

**B) Answer Any Two:** **2X5**

- 1) Write the product and mechanism in the following:

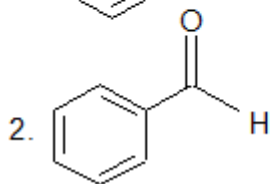
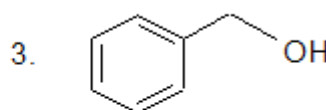
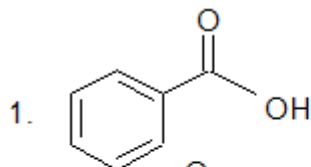


- 2) Describe how the following transformation could be achieved?



- 3) Describe Pechmann reaction with suitable example.

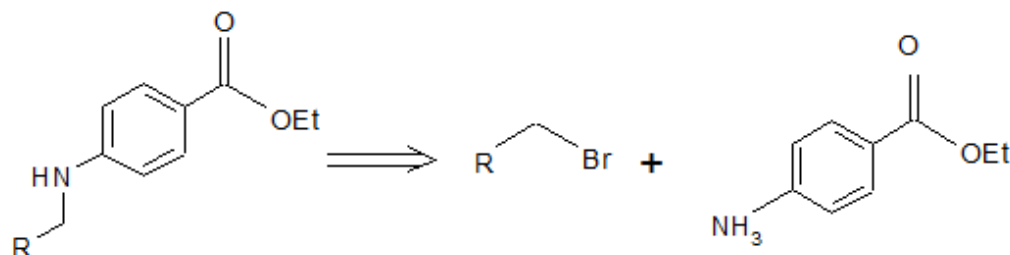
**Q.3 A)** How are the following protected? Give their mechanism. **10**



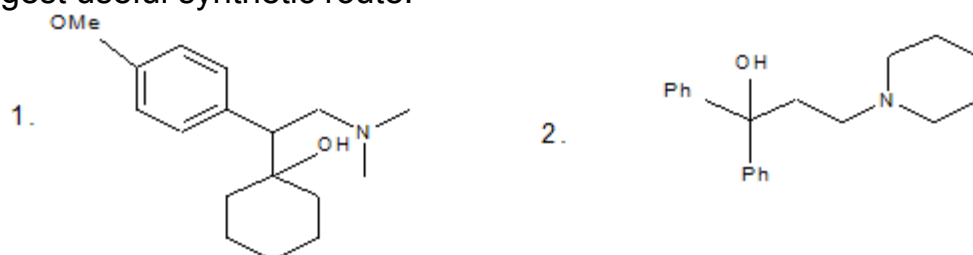
**B) Answer Any Two:**

2X5

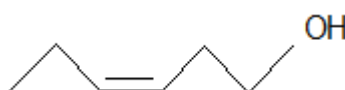
- 1) Plan the synthesis of the following TM from the given starting material:



- 2) Carryout the retrosynthetic analysis of the following and suggest useful synthetic route:



- 3) Using retrosynthetic analysis suggests the synthetic route for the following molecule:



**Q.4 A)** Give the synthesis of sodium borohydride. Describe its applications in organic synthesis. **10**

**B) Answer Any Two:**

2X5

- 1) Give recent development in the treatment of AIDS.
- 2) Explain the use of Taxol as Anti-AIDS agents.
- 3) Give synthesis and SAR of ampicillin.

**Q.5 A)** How organotin compounds are prepared? Describe their utility in organic synthesis. **10**

**B) Answer Any Two:**

2X5

- 1) Explain stereochemistry of fused bicyclic compounds.
- 2) What are uses of periodic acid and periodate in organic synthesis.
- 3) Describes applications metal carbonyl in organic synthesis.

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**Ph.D. Course Work Examination June / July – 2017**  
**MICROBIOLOGY (Paper – II)**  
**Recent Trends in Microbiology**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions:** 1) *All questions are compulsory.*  
 2) *Figures to the right indicate full marks.*  
 3) *Draw neat and well labeled diagrams wherever necessary.*

- Q.1 A)** Explain in detail principle, working and applications of Atomic Absorption Spectroscopy. **10**
- B) Write short notes on any two:** **10**
- 1) NMR
  - 2) X-ray Crystallography.
  - 3) IR
- Q.2 A)** Elaborate on various steps involved in GCMS. **10**
- B) Write short notes on any two:** **10**
- 1) Thin Layer Chromatography.
  - 2) Applications of radioisotopes in biology.
  - 3) UV/ Visible Spectroscopy.
- Q.3 A)** Describe schematically various steps in Density gradient centrifugation. **10**
- B) Write short notes on any two:** **10**
- 1) Ion exchange chromatography
  - 2) SDS- PAGE
  - 3) High Performance Liquid Chromatography
- Q.4 A)** Discuss on principle, types & applications of Polymerase Chain Reaction. **10**
- B) Write short notes on any two:** **10**
- 1) Southern blotting.
  - 2) Centrifugation – preparative & analytical.
  - 3) DNA fingerprinting.
- Q.5 A)** Write in detail 16-s r-RNA gene sequencing. **10**
- B) Write short notes on any two:** **10**
- 1) Lipid profiling – FAME analysis.
  - 2) Restriction mapping –RFLP.
  - 3) Phylogenetic backbone for prokaryotic systems.

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**MICROBIOLOGY Paper – III (New) and Paper – IV (Old)**  
**Medical Microbiology and Immunology**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Describe susceptibility testing of fastidious bacteria. **10**
- B) Write short notes on any two:** **10**
- 1) Plasmodium vivax
- 2) Interleukins
- 3) Rubella
- Q.2**    **A)** Write an account of pathogenicity and laboratory diagnosis of infection caused by *Vibrio cholerae*. **10**
- B) Write short notes on any two:** **10**
- 1) Lymphokines
- 2) Dengue
- 3) Cryptococcosis
- Q.3**    **A)** Describe general properties and pathogenicity of Influenza virus. **10**
- B) Write short notes on any two:** **10**
- 1) Hepatitis
- 2) Entamoeba histolytica
- 3) Ebola
- Q.4**    **A)** Describe the recent advances in serological diagnosis. **10**
- B) Write short notes on any two:** **10**
- 1) Interferon
- 2) Measles
- 3) Trichoderma vaginalis
- Q.5**    **A)** Write an essay on “Candidiasis”. **10**
- B) Write short notes on any two:** **10**
- 1) Immunotherapy
- 2) Mumps
- 3) Maduramycosis

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**MICROBIOLOGY Paper – III (New) and Paper – IV (Old)**  
**Environmental and Agricultural Microbiology**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Explain in detail the principles and techniques for the isolation, enumeration and identification of the dissimilatory sulphate reducing bacteria. **10**
- B) Write short notes on any two:** **10**
- 1) Microbial life in hot springs
  - 2) Biofilm development
  - 3) Characteristics of tannery waste
- Q.2 A)** Explain in detail waste treatment by trickling filters. **10**
- B) Explain in short any two of the following:** **10**
- 1) Bioremediation of xenobiotic compounds
  - 2) Preparation of Azotofertilizer
  - 3) Acclimatization and isolation of microorganisms in waste water technology.
- Q.3 A)** Describe in detail preparation and applications of Rhizobium biofertilizer. **10**
- B) Write short notes on any two:** **10**
- 1) Microbial life under deep sea
  - 2) Waste disposal control and regulations
  - 3) Root zone technology
- Q.4 A)** Describe microbial life in hyper saline environment. **10**
- B) Write short notes on any two:** **10**
- 1) Constraints and priorities of bioremediation
  - 2) Types of bioreactors
  - 3) Treatment of antibiotic waste
- Q.5 A)** Describe in characteristics and treatment of dairy waste. **10**
- B) Write short notes on any two:** **10**
- 1) Phosphate solublizers
  - 2) Epidemiology of plant diseases
  - 3) Bioremediation of organic compounds

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**ENVIRONMENTAL SCIENCE (Paper – II)**  
**Recent Trends in Environmental Science**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: Each questions carry equal marks.***

- Q.1**    **A)** Explain principle and applications of Colorimeter. **10**
- B) Write in brief on any two of the following:** **10**
- 1) Application of GIS in ecology
- 2) Mass Spectrophotometer
- 3) Use of GIS in agriculture
- Q.2**    **A)** What are scale, height and process of aerial photography? **10**
- B) Write in brief on any two of the following:** **10**
- 1) Ion chromatography
- 2) Differential GPS
- 3) UV spectrophotometer
- Q.3**    **A)** What are the uses of X-ray? Explain the principle. **10**
- B) Write in brief on any two of the following:** **10**
- 1) Types and uses of sensors
- 2) Nephelometer
- 3) GIS in disaster management
- Q.4**    **A)** Applications of GIS and RS in water resource management. **10**
- B) Write in brief on any two of the following:** **10**
- 1) Method of sample preparation
- 2) Main components of GIS
- 3) Application of GIS in Geological mapping
- Q.5**    **A)** Explain the principle of NMR and its applications. **10**
- B) Write in brief on any two of the following:** **10**
- 1) Applications of GPS
- 2) Overview of GIS application areas in the environmental field
- 3) Use of GIS & RS in urban planning





Seat No.	
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Ph.D. Course Work Examination June / July – 2017

**BOTANY (Paper – III)**

**Advanced Development in Botany: Plant Physiology (New)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** Define the term enzyme and give the classification enzyme. **10**
- B) Answer any two of the following:** **10**
- 1) Comment on role of light and dark period in induction of flowering.
- 2) Give an account of nitrogenase enzyme.
- 3) Explain the difference between molar and molal solutions with examples.
- Q.2**    **A)** Explain the interaction between photosynthesis and nitrogen metabolism. **10**
- B) Answer any two of the following:** **10**
- 1) Effect of SO<sub>2</sub> on metabolism of plant.
- 2) What is true and normal solution?
- 3) Role of terpenoids in plant.
- Q.3**    **A)** Explain any three methods of expressing the concentrations of solutions (Except molar and molal solution). **10**
- B) Answer any two of the following:** **10**
- 1) Classification of alkaloids
- 2) Give the structure of 'nif' gene.
- 3) Effect of elevated CO<sub>2</sub> concentration on plant metabolism
- Q.4**    **A)** What is stress? Add note on physiological mechanism developed by plant against high light intensity. **10**
- B) Answer any two of the following:** **10**
- 1) Hormonal regulation of enzyme.
- 2) Write about transamination.
- 3) Give an account of fruit ripening.
- Q.5**    **A)** Give an account of Vernalization and add note on factors affecting on it. **10**
- B) Answer any two of the following:** **10**
- 1) Role of porphyrils in plant metabolism.
- 2) Effect of UV light on plant metabolism.
- 3) Write note on phytochrome control of enzyme.



Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**ECONOMICS (Paper – II)**  
**Recent Trends in International Economics (Old)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** Explain gains from international trade. **10**
- B) Write short answer on any two:** **10**
- 1) Free Trade
- 2) Dumping
- 3) Role of MNCs
- Q.2**    **A)** Examine Linder's Theory of Volume of Trade and Demand Pattern. **10**
- B) Write short answer on any two:** **10**
- 1) Product Cycle Theory
- 2) Globalization and Trade
- 3) Intra-Industry Trade
- Q.3**    **A)** Discuss the Agreements of WTO in detail. **10**
- B) Write short answer on any two:** **10**
- 1) Differentiate between GATT and WTO
- 2) Kenen's Theory of Human Capital
- 3) Functions of WTO
- Q.4**    **A)** Analyze the impact of Liberalization of India's Foreign Trade. **10**
- B) Write short answer on any two:** **10**
- 1) Latest India's Trade Policy
- 2) Review of Export Promotion Measures
- 3) Changing Composition and Direction of India's Foreign Trade
- Q.5**    **A)** Elaborate the role of SEZs in the development of economy. **10**
- B) Write short answer on any two:** **10**
- 1) FDI
- 2) Human Capital Development
- 3) WTO and its impact on different sectors of economy



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**Ph.D. Course Work Examination June / July – 2017**  
**ECONOMICS (Paper – III)**  
**Modern Theories in Economics (Old)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Discuss instruments of Monetary and fiscal policy. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Flexible exchange rates
- 2) Group equilibrium
- 3) Objectives of the firm
- Q.2**    **A)** Examine price leadership model. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Limit pricing
- 2) Product differentiation
- 3) Golden rule of accumulation.
- Q.3**    **A)** Discuss in detail managerial discretion model. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Foreign trade multiplier
- 2) Fixed exchange rate
- 3) Non collusive oligopoly
- Q.4**    **A)** Discuss price rigidity with kinky demand curve. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Workable competition
- 2) IS LM model
- 3) Cartels
- Q.5**    **A)** Discuss the Hall hitch model of pricing. **10**
- B) Write short notes on any two of the following:** **10**
- 1) Goals of the firm
- 2) Capital mobility
- 3) Market structure

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**ECONOMICS (Paper – III)**  
**Economics of Agriculture and Co-operation (New)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Critically discuss Fei-Ranis Model. **10**
- B) Write short notes on any Two of the following.** **10**
- 1) Agriculture and economic development
- 2) Optimum inputs combination
- 3) Capital formation in agriculture
- Q.2**    **A)** Discuss the problems of dry-land agriculture in India. **10**
- B) Write short notes on any Two of the following.** **10**
- 1) Impact of New agricultural technology on production function
- 2) Eco-friendly practices in agriculture
- 3) Problems of poultry industry in Maharashtra
- Q.3**    **A)** Critically examine the role and progress of NABARD in India **10**
- B) Write short notes on any Two of the following.** **10**
- 1) Post-harvest technology
- 2) Precision farming
- 3) Problems of sugar cooperative in Maharashtra
- Q.4**    **A)** Discuss the importance and progress of Agro-industries in India. **10**
- B) Write short notes on any Two of the following.** **10**
- 1) Corporate farming
- 2) Problems of animal husbandry in India
- 3) Problems of Leadership in co-operative organization
- Q.5**    **A)** Critically examine the cooperative movement in Maharashtra. **10**
- B) Write short notes on any Two of the following.** **10**
- 1) Role of co-operative agriculture credit societies
- 2) Horticulture and floriculture
- 3) HRD in co-operatives

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**Ph.D. Course Work Examination June / July – 2017**  
**ECONOMICS (Paper – IV)**  
**Economics of Agriculture**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Discuss the role of agriculture in economic development. **10**
- B) Answer in short (any two):** **10**
- 1) Agriculture and social justice
- 2) Expansion Path
- 3) AoA
- Q.2**    **A)** Write a note on Land- Labour relationship in agriculture sector. **10**
- B) Answer in short (any two):** **10**
- 1) Product- mix
- 2) Post Harvest Technology
- 3) W.T.O.
- Q.3**    **A)** Critically evaluate the Watershed Development Program in India. **10**
- B) Answer in short (any two):** **10**
- 1) Organic Farming
- 2) Co-operative societies
- 3) Farmers Rights
- Q.4**    **A)** Explain the various sources of agricultural finance. **10**
- B) Answer in short (any two):** **10**
- 1) HTV Seeds
- 2) Diminishing Returns
- 3) GM crops
- Q.5**    **A)** Examine the nature and composition of agriculture exports in India. **10**
- B) Answer in short (any two):** **10**
- 1) Food Security
- 2) National Agriculture Policy
- 3) Water Rates in Agriculture



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**Ph.D. Course Work Examination June / July – 2017**  
**A.I.H.C. & A. (Paper – II)**  
**Recent Trends in Indian Culture & Archaeology (New)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** Explain the various phases of development in the Stone Ages. **10**
- B) Write short answer any two of the following:**
- 1) Megaliths **05**
- 2) Stone Age diet **05**
- 3) Stone Age Dwellings **05**
- Q.2 A)** Discuss in brief through archaeological sources the Social Life of Indus Valley people. **10**
- B) Write short answer any two of the following:**
- 1) Harappan Religion **05**
- 2) Harappan Town Planning **05**
- 3) New discoveries related to Indus Valley Civilization **05**
- Q.3 A)** Elucidate in brief the various features of Buddhism. **10**
- B) Write short answer any two of the following:**
- 1) Jainism **05**
- 2) Vaishnavism **05**
- 3) Kapalikas and kalamukhas **05**
- Q.4 A)** Explain in brief the various techniques of excavation. **10**
- B) Write short answer any two of the following:**
- 1) Exploration **05**
- 2) Field Walking **05**
- 3) Vertical Excavation **05**
- Q.5 A)** Explain in brief about the importance of archaeology in reconstructing the past. **10**
- B) Write short answer any two of the following:**
- 1) C-14 Dating **05**
- 2) Thermo luminescence dating **05**
- 3) Relative Dating **05**

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**Ph.D. Course Work Examination June / July – 2017**  
**A.I.H.C.& A. (Paper – III)**  
**Research in Indian Art Architecture (New)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** Write in brief about Harappan art. **10**
- B) Write short notes on any two:** **10**
- 1) Great bath, Mohen-jo-daro
- 2) Animal depiction in Bhimbetka paintings
- 3) Indus seals & sealings
- Q.2**    **A)** Discuss in brief about Mahabodhi temple at Bodhagaya. **10**
- B) Write short notes on any two:** **10**
- 1) Gate ways of Sanchi stupa
- 2) Didarganj Yakshi
- 3) Nagas of Bharahut
- Q.3**    **A)** Write a note in brief on Nager style of Temple architecture. **10**
- B) Write short notes on any two:** **10**
- 1) Cave No. 10, "Vishwakarma", Ellora
- 2) Ajanta Cave No. 1
- 3) Gangawataran, Mahabalipuram
- Q.4**    **A)** Write in brief on rock-cut cave temple, Kailasa. **10**
- B) Write short notes on any two:** **10**
- 1) Sun temple, Konark
- 2) Gaja-Laksmi motif
- 3) Dashawatar temple, Deogarh
- Q.5**    **A)** Write a brief note on Bagh paintings. **10**
- B) Write short notes on any two:** **10**
- 1) Brahadishwar temple, Tanjavur
- 2) Durga temple, Aihole
- 3) Paintings, Badami

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**Ph.D. Course Work Examination June / July – 2017**  
**LIBRARY AND INFORMATION SCIENCE (Paper – II)**  
**Recent Trends in Library and Information Science**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** What is ICT? Discuss recent trends in ICT in LIS. **10**
- B) Short answer type. (Solve any two)** **10**
- 1) Web 2.0
- 2) Principals of Library 2.0
- 3) E-Governance
- Q.2**    **A)** What is Intellectual Property Right (IPR)? Discuss their issues? **10**
- B) Short answer type (Solve any two)** **10**
- 1) Development issues of digital libraries in the world
- 2) Green stone
- 3) Dublin Core
- Q.3**    **A)** Discuss on Consortia? Give their types? **10**
- B) Short answer type (Solve any two)** **10**
- 1) Resource sharing in India
- 2) J-Gate
- 3) Resource sharing in Internet Era
- Q.4**    **A)** Introduction concept of RDBMS. **10**
- B) Short answer type (Solve any two)** **10**
- 1) LINUX
- 2) DBMS
- 3) Interfaces for RDBMS using My SQL.
- Q.5**    **A)** Discuss content of Information literacy programs in Higher Education? **10**
- B) Short answer type (Solve any two)** **10**
- 1) Wi-Fi
- 2) RFID
- 3) Digital Literacy

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**Ph.D. Course Work Examination June / July – 2017**  
**PSYCHOLOGY (Paper – II)**  
**Recent Trends in Psychology**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Distinguish between Classical Conditioning and Operant Conditioning. **10**
- B) Answer any two short notes of the following:** **10**
- 1) Organizational principles of perception
- 2) Working memory
- 3) Critical thinking
- Q.2**    **A)** Discuss motivational and cognitive influences on learning. **10**
- B) Answer any two short notes of the following:** **10**
- 1) Types of reasoning
- 2) Emotional intelligence
- 3) Verbal learning
- Q.3**    **A)** What do you understand by perception? How is it related to sensation and attention? **10**
- B) Answer any two short notes of the following:** **10**
- 1) Sensation of Vision
- 2) Reinforcement schedule
- 3) Intelligence
- Q.4**    **A)** Explain the nature of long-term memory. **10**
- B) Answer any two short notes of the following:** **10**
- 1) Divided attention
- 2) Generalization and discrimination
- 3) Drive Theory of motivation
- Q.5**    **A)** Discuss the models of top-down processing. **10**
- B) Answer any two short notes of the following:** **10**
- 1) Sensation of Touch
- 2) Physiological basis of emotion
- 3) Echoic memory

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**PSYCHOLOGY (Paper – III)**  
**Modern Topics in Psychology (Old)**  
**(Cognitive Process and Personality)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Explain the cerebral cortex and its organization according to function. **10**
- B) Write short answers (Any two)** **10**
- 1) Uses of Psychological Testing
- 2) Neuropsychology of Offending
- 3) Cultivating Positive Emotion
- Q.2**    **A)** Explain importance of motivation and skills to increase performance of players. **10**
- B) Write short answers (Any two)** **10**
- 1) Delinquent
- 2) Maslow motivation theory
- 3) Addiction to crime
- Q.3**    **A)** Explain importance of factor analysis in test construction. **10**
- B) Write short answers (Any two)** **10**
- 1) Cerebral hemisphere
- 2) Prevention of crime
- 3) Positive Emotion
- Q.4**    **A)** Evaluate the Allport and Rogers models of health. **10**
- B) Write short answers (Any two)** **10**
- 1) Training and coaching techniques
- 2) Gifted and Backward children
- 3) Radiological investigation of Brain
- Q.5**    **A)** Explain principals of teaching. **10**
- B) Write short answers (Any two)** **10**
- 1) Role of Sport Psychologist
- 2) Psychoanalysis and Crime
- 3) Content and Construct Validity

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**PSYCHOLOGY Paper – III (New) and Paper – IV (Old)**  
**Advance Development in Clinical & Counseling Psychology**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Define the clinical psychology. Discuss the historical development of clinical psychology up to I and II world war. **10**
- B) Write short answers (Any two):** **10**
- 1) Explain the interpersonal model of clinical psychology.
  - 2) What is histrionic narcissistic antisocial?
  - 3) State the counselors Skills in counseling.
- Q.2 A)** Discuss the importance of Neo-Freudian psychotherapy in clinical perspective. **10**
- B) Write short answers (Any two):** **10**
- 1) Describe the symptoms of anxiety and phobia disorder.
  - 2) What is interpersonal psychotherapy?
  - 3) State the functions of brain.
- Q.3 A)** What is counseling? Explain the goals counseling psychology? **10**
- B) Write short answers (Any two):** **10**
- 1) Explain the role of counselor.
  - 2) Explain the family psychotherapy.
  - 3) State the bipolar somatoform.
- Q.4 A)** Evaluate the importance of new technology in counseling process. **10**
- B) Write short answers (Any two):** **10**
- 1) Explain the group counseling.
  - 2) State the symptoms of Anxiety.
  - 3) State the interview technique.
- Q.5 A)** Explain cognitive disorders in old age. **10**
- B) Write short answers (Any two):** **10**
- 1) Describe the Carl Jung contribution in clinical perspective.
  - 2) What is psychoanalysis?
  - 3) What is Behavioral therapy?

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**Ph.D. Course Work Examination June / July – 2017**  
**SOCIAL WORK (Paper – II)**  
**Recent Trends in Social Work (New)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Discuss on the development of social work professionalism in UK. **10**
- B) Give answers in short (Any Two) :** **10**
- 1) Goals of social work
  - 2) Code of ethics for social work practice
  - 3) Challenges of social work in India
- Q.2 A)** Explain the concept of HRD in Indian perspective. **10**
- B) Give answers in short (Any Two) :** **10**
- 1) Machineries for industrial relation
  - 2) HRM concept
  - 3) ESI Act
- Q.3 A)** Comment on contribution of five year plans in rural development. **10**
- B) Give answers in short (Any Two) :** **10**
- 1) Problems of urban community
  - 2) Programmes of tribal community
  - 3) Leadership theories
- Q.4 A)** Take the review of the rehabilitation of aged and disabled. **10**
- B) Give answers in short (Any Two) :** **10**
- 1) Social work intervention for women welfare
  - 2) The Protection of children from sexual offences Act 2012.
  - 3) Women's status in Indian society.
- Q.5 A)** Comment on the development of medical social work. **10**
- B) Give answers in short (Any Two) :** **10**
- 1) Policies for mental health
  - 2) Psycho-sexual development
  - 3) Community health

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**SOCIAL WORK (Paper – III)**  
**Social Work and Social Development (New)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Examine the approaches of social development. **10**
- B) Write short note on any two:** **10**
- 1) Concept of development
  - 2) Models of social development
  - 3) New Economic policy
- Q.2 A)** Explain the concept and objectives of Social Justice. **10**
- B) Write short note on any two:** **10**
- 1) Fundamental Rights
  - 2) Ambedkar and Social Justice
  - 3) Civil Rights
- Q.3 A)** Discuss the indicators of women development. **10**
- B) Write short note on any two:** **10**
- 1) Gender equality
  - 2) Women empowerment
  - 3) Gender budgeting
- Q.4 A)** Examine the crisis intervention model of Social Work Practice. **10**
- B) Write short note on any two:** **10**
- 1) Behaviour modification
  - 2) Social action model
  - 3) Counseling
- Q.5 A)** Bringout the meaning and importance of social work research. **10**
- B) Write short note on any two:** **10**
- 1) Experimental research
  - 2) Variables
  - 3) Steps in social work research



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**Ph.D. Course Work Examination June / July – 2017**  
**MASS COMMUNICATION & JOURNALISM (Paper – II)**  
**Mass Communication and Society**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** What is communication? Distinguish between verbal and non-verbal communication. **10**
- B) Short answer type (Any two) 10**
- 1) Bullet theory
  - 2) Nature and process of communication
  - 3) Democratic participant theory
- Q.2 A)** What are the various methods of communication research? **10**
- B) Short answer type (Any two) 10**
- 1) Media research
  - 2) Content analysis
  - 3) Principals of media management
- Q.3 A)** Explain why Information is important in today's era of globalization. **10**
- B) Short answer type (Any two) 10**
- 1) Environmental news
  - 2) Communication through Traditional media
  - 3) Information Society
- Q.4 A)** Describe the concept of social responsibility in the field of Journalism. **10**
- B) Short answer type (Any two) 10**
- 1) Freedom of expression
  - 2) Problems of working journalist
  - 3) Article 19 and media's role
- Q.5 A)** What is theory? Elaborate its role in research. **10**
- B) Short answer type (Any two) 10**
- 1) Patent Act
  - 2) Types of Newspaper Ownership
  - 3) Barriers in communication

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**Ph.D. Course Work Examination June / July – 2017**  
**MASS COMMUNICATION AND JOURNALISM (Paper – III)**  
**Mass Communication in New Millennium**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** What is 'participatory communication'? Discuss its dominant paradigms in a communication process. **10**
- B) Write short answers any two of the following:**
- 1) What is 'Citizen Journalism'? **05**
  - 2) Importance of 'Development Communication'? **05**
  - 3) What are the models of 'Development Communication'? Give examples. **05**
- Q.2 A)** What is the significance of 'Multimedia Journalism' and 'Community Media' with reference to development communication? **10**
- B) Write short answers any two of the following:**
- 1) Write a note on social media. **05**
  - 2) What is 'market driven media'? **05**
  - 3) What is 'media content'? **05**
- Q.3 A)** Write a note on the significance of folk media and traditional media in development communication. **10**
- B) Write short answers any two of the following:**
- 1) Role of Social Media in cultural integration. **05**
  - 2) What are the effects of localization on media system? Discuss in brief. **05**
  - 3) Write a short note on 'Glocalisation' and Globalization'. **05**
- Q.4 A)** Write an essay on International Communication and challenges for journalists working in new media. **10**
- B) Write short answers any two of the following:**
- 1) Social and Cultural effects of Alternate Media? **05**
  - 2) Information over load in Multimedia. **05**
  - 3) What do you know about 'cognitive load'? **05**
- Q.5 A)** Elucidate with example what are the effects of internet on mainstream media. **10**
- B) Write short answers any two of the following:**
- 1) Digital natives and digital immigrants of new millennium. **05**
  - 2) Access to information and ICT enabled information. **05**
  - 3) ICT and empowerment through digitization in new millennium. **05**

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**M. Phil / Ph.D. Course Work Examination June / July – 2017**  
**EDUCATION (Paper – II)**  
**Recent Trends in Education (Old)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions:** 1) *All questions are compulsory.*  
 2) *Figures on right hand side indicate marks.*  
 3) *Draw labeled diagram wherever necessary.*

- Q.1**    **A)** Discuss the need of any two Recent trends in Education. **10**
- B) Answer any two:** **10**
- 1) Importance of Education for sustainable future
- 2) Need of character formation
- 3) Quality in higher Education
- Q.2**    **A)** Explain the concept of (in your own words) internationalization of education. **10**
- B) Answer any two:** **10**
- 1) Difference between Assessment and Evaluation
- 2) Enjoyable Education in India
- 3) Need of equity in educational opportunities in India
- Q.3**    **A)** Discuss how leadership can solve today's Indian higher education problem. **10**
- B) Answer any two:** **10**
- 1) Multigrade Teaching in Indian Classrooms
- 2) Active educational in higher Education
- 3) Need of quality audit in Higher Education
- Q.4**    **A)** Explain innovation in higher Education and its need. **10**
- B) Answer any two:** **10**
- 1) Teaching methods in higher Education in 21<sup>st</sup> Century.
- 2) Nature of Critical Thinking
- 3) Importance of Media literacy
- Q.5**    **A)** Highlight and discuss the problems in quality in Higher Education in India. **10**
- B) Answer any two:** **10**
- 1) Quality management in Higher Education
- 2) Types of alternative Assessment
- 3) Nature of short term Teacher training programme

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**M. Phil / Ph.D. Course Work Examination June / July – 2017**  
**EDUCATION (Paper – II)**  
**Trends in Education (New)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1** What is meant by continuous and comprehensive evaluation system? Explain need, merits and demerits of CCE. **20**
- OR**
- What is meant by collaborative teaching? Why it is useful in present teaching learning.
- Q.2** Why NAAC is essential in higher education? Explain any five activities for best practices in Teacher Education for NAAC. **20**
- OR**
- What is Project Based Learning? Explain the process of Project based learning?
- Q.3** **A)** Explain the scope of Inclusive Education. **10**
- B)** Explain the need of e-learning strategies in today's education? **10**
- OR**
- A)** Explain the need NCTE in Teacher Education? **10**
- B)** What are the objectives of Open Book Examination System? What are merits and demerits of Open Book Examination? **10**
- Q.4** **Answer the following questions (Any Five)** **40**
- 1) Explain the role and function of Bal Bharati.
  - 2) Why panel discussion is essential in teacher education programme?
  - 3) What is the role of Open Universities in higher education?
  - 4) Explain the need of NAAC with reference to quality concern in Teacher Education.
  - 5) What is meant by Android Educational Apps? What is need of those Apps?
  - 6) What are challenges and opportunities in Digital age?
  - 7) Explain the merits of virtual classroom?

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**M.Phil / Ph.D. Course Work Examination June / July – 2017**  
**EDUCATION (Paper – III)**  
**Modern Topics in Education (Old)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Explain about Innovative method of Teaching, give example. **10**
- B) Attempt in brief any two of the following:** **10**
- 1) Learning styles
- 2) Concept of Human capital
- 3) Administrative system reforms
- Q.2**    **A)** How will you implement Social value Based Higher Education Administration? **10**
- B) Attempt in brief any two of the following:** **10**
- 1) Work Culture in Higher Educative
- 2) Community Education
- 3) Brain Research
- Q.3**    **A)** How can social well being take place by individual Human rights? **10**
- B) Attempt in brief any two of the following:** **10**
- 1) Drawbacks of Global Education
- 2) Production and cost of Education
- 3) Impact of UGC on Universities
- Q.4**    **A)** Explain how the school works as a social community. **10**
- B) Attempt in brief any two of the following:** **10**
- 1) Concept of Child Education
- 2) Quality management in Higher Education Administration
- 3) Unit cost of Education
- Q.5**    **A)** Explain the concept of Functional Behavioral Assessment. **10**
- B) Attempt in brief any two of the following:** **10**
- 1) Unit cost of Higher Education in India
- 2) Age of Litigation
- 3) HIV/AIDS and Human Rights

Seat No.	
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**M.Phil / Ph.D. Course Work Examination June / July – 2017**  
**EDUCATION (Paper – III)**  
**Advance Development in Education (New)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1** Explain the Western perspectives of Education with reference to Information, Knowledge and Wisdom. **20**
- OR**
- Discuss Kolb's Experiential Learning Theory with Examples.
- Q.2** Give the recommendation of Primary Education in National Policy on Education 1986 and Programme Action of 1992. **20**
- OR**
- Discuss the NCFTE of 2010.
- Q.3** **A)** Explain the Role of Education in Globalization? **10**
- B)** Explain the essential Life Skills for Personal Development? **10**
- OR**
- A)** Discuss the Role of Education Universalization of Institutes. **10**
- B)** Explain the concept of Brain Based Research? **10**
- Q.4** **Answer the following questions (Any Five)** **40**
- 1) Explain the concept of Value Education?
  - 2) Explain component of Peace Education?
  - 3) Explain the relation between Economics of Production and cost?
  - 4) What are the Functions of UGC?
  - 5) Discuss Value Model of Human Right Education.
  - 6) Explain the concept of Global Education?
  - 7) Explain Social Exclusion and Inclusion in Higher Education?

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**M.Phil / Ph.D. Course Work Examination June / July – 2017**  
**EDUCATION (Paper – III)**  
**Teacher Education (New)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1** Explain the Nature and Approaches of Teacher Education. **20**  
**OR**  
 State the recommendations of commissions after post-independence period related to Teachers Education and explain their impact.
- Q.2** What is professional development of Teacher Educators? Explain the role of technology for their professional development. **20**  
**OR**  
 Explain social, emotional, managerial and educational classroom processes.
- Q.3** **A)** Explain the role of NCTE in qualitative improvement of Teacher Education Programmes. **10**  
**B)** Explain the process model of Teacher Education. **10**  
**OR**
- Q.3** **A)** Explain the importance of Grievance committee for Teacher Education. **10**  
**B)** Explain Teacher Thought Process. **10**
- Q.4** **Write notes on any Five of the following:** **40**  
 a) Concept of Teaching  
 b) Aims of Teacher Education  
 c) Role of UGC in Teacher Education  
 d) Portfolio in Teacher Education  
 e) Teachers accountability  
 f) Concept of decision making  
 g) Seminars

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**M.Phil / Ph.D. Course Work Examination June / July – 2017**  
**EDUCATION (Paper – IV)**  
**Advance Development in Education**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Which are the types of statistics explain in details? **10**
- B) Answer the following (Any two):** **10**
- 1) Explain Anthony Greasen's model for learning style.
  - 2) What is the major recommendation of 1968 NEP?
  - 3) Explain Role of teaching in e-learning?
- Q.2 A)** Explain Educational contribution of John Dewey. How is the useful for Present Education Policy? **10**
- B) Answer the following (Any two):** **10**
- 1) Explain SPSS package for data analysis?
  - 2) How will you use internet in your teaching?
  - 3) Explain characteristics of Sudbury model.
- Q.3 A)** What is E-content development? What are the steps involved in E-content development? **10**
- B) Answer the following (Any two):** **10**
- 1) Explain M. K. Gandhi's Philosophy for Education.
  - 2) Give the recommendation of University Education Commission (1948) for Teacher Education.
  - 3) Give the importance of SPSS in Research.
- Q.4 A)** Explain various learning styles with its merits & demerits. **10**
- B) Answer the following (Any two):** **10**
- 1) How are virtual classrooms teaching learning process done?
  - 2) Explain thoughts of Fedrich Froebel.
  - 3) Explain Black board operation recommended in NEP1986.
- Q.5 A)** What are the various recommendation of secondary Education (1952-35) about teacher Education and girl Education? **10**
- B) Answer the following (Any two):** **10**
- 1) How is professional literature on learning styles of useful for teaching process?
  - 2) Explain tagores Naturalism.
  - 3) Explain use of SPSS in Education.



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**Ph.D. Course Work Examination June / July – 2017**  
**LAW (Paper – II)**  
**Law Justice and Society (New)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions:** 1) *Answer all five questions.*  
 2) *All questions carry equal marks.*

- Q.1**    **A)** It is presumption that liberal Utilitarian Tradition plays a vital role in justice delivery system. Explain **10**
- B) Short notes on any two:** **10**
- 1) Varieties of Justice
- 2) Western thought on Justice
- 3) Freedom of Speech and Expression in relation to Justice
- Q.2**    **A)** How the Equivalence theory is differ from Collective theory in relation to Law and Justice. **10**
- B) Short notes on any two** **10**
- 1) Moral and Tradition in Justice
- 2) Types of Sanction
- 3) Pluralism – control by elite
- Q.3**    **A)** Temple of Justice always looks one step ahead the interest of Public at large and do not hesitate any political parties. Explain with the help of few decided cases. **10**
- B) Short notes on any two:** **10**
- 1) Impact of Technology on environment
- 2) Need of Speedy Trial in Justice Delivery system
- 3) Role of Government in democratic system
- Q.4**    **A)** Human life expectancy is increasing day by day due to Medical Technology. What are the 10 Pros and Cons? Is there any need to be regulated by the State? **10**
- B) Short notes on any two:** **10**
- 1) Pressure in Political making
- 2) Legitimate power
- 3) Effect of Media public at large
- Q.5**    **A)** The concept of Dharma plays a vital role in India in recent years than pre independence era. Give reasons. **10**
- B) Short notes on any two:** **10**
- 1) Right to information
- 2) Role of citizen in democratic set up
- 3) Role of Judiciary in Justice delivery system

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**Ph.D. Course Work Examination June / July – 2017**

**LAW (Paper – III)**

**Law Justice and Society (Old)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions:** 1) Answer all **five** questions.

2) **All** questions carry **equal** marks.

- Q.1 A)** Critically evaluate the concept of Dharma and find out it's relevance in present Justice delivery system in India. **10**
- B) Short notes on. (Any Two)** **10**
- 1) Justice as Rights
  - 2) Economic Theories of Law and Justice
  - 3) Justice Vis-a-vis Morality
- Q.2 A)** 'Mass Media is playing a key role in effective democratic governance in India'. Do you agree with this statement? Support your choice with germane reasons based on relevant law and practice. **10**
- B) Short notes on. (Any Two)** **10**
- 1) Law and Justice in Indian Constitutional Ordering: A Critique
  - 2) Indian Citizen's Right to Information: Law and Practice
  - 3) Impact of Independence of Judiciary in Indian Democracy
- Q.3 A)** Elaborate how law is an important instrumentality of social control in India. **10**
- B) Short notes on. (Any Two)** **10**
- 1) Role of morals in shaping up Laws in India
  - 2) Sanctuary of sanctions and its efficacy in Indian setup
  - 3) Impact of Right to Education Law in India
- Q.4 A)** Comment upon the functioning of Alternative Disputes Resolution mechanism in Indian Justice delivery system. **10**
- B) Short notes on. (Any Two)** **10**
- 1) Role of Law in Ideal Democratic Governance
  - 2) Hierarchy of Courts in India
  - 3) Indian Judiciary and its Adventurism
- Q.5 A)** Discuss the effect of technology on environment and find out whether there is need for changing the existing relevant law for its effective implementation in India. **10**
- B) Short notes on. (Any Two)** **10**
- 1) Influence of "Lobbying" by Pressure Groups on Legal Policies in India: A Note
  - 2) Cyber Crimes in India: Legislative Vacuum versus Judicial Ignorance
  - 3) Preventive Legal steps against misuse of Medical Technology in India

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**Ph.D. Course Work Examination June / July – 2017**  
**LAW Paper – III (New) and Paper – IV (Old)**  
**Indian Constitutional Law: The New Challenges**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** Discuss the Temporary provisions granted to Jammu & Kashmir under Art. 370. What problem India is facing today and suggest your remedy. **10**
- B) Answer the following (Any two):** **10**
- 1) Creation of New States
- 2) Tribal Areas
- 3) Sarkaria Commissions report
- Q.2**    **A)** Define “State” Explain how the meaning of “State” is goes on expanding now days with the liberal policies of the Government. **10**
- B) Answer the following (Any two):** **10**
- 1) Impact of Privatization
- 2) Gender Justice & Rights of Women
- 3) Right of Equality (Article 14)
- Q.3**    **A)** Critically examine how the Directive Principles of State Policy Super seed the Fundamental Rights. Suggest case laws if any. **10**
- B) Answer the following (Any two):** **10**
- 1) Commercialization of Indian Education and role of State
- 2) Right to Information Act 2005
- 3) Freedom of Speech, broadcast and telecast and its imitation
- Q.4**    **A)** Explain the Independence of Judiciary and Judicial Activism in India. **10**
- B) Answer the following (Any two):** **10**
- 1) Right of Minorities to establish Educational institution
- 2) Centre and State Relation
- 3) Rehabilitation of internally displaced persons in India
- Q.5**    **A)** Discuss the Electoral Reforms in recent years? How the Election Commission is working to set aside the Criminal recorded persons from contesting the elections to restore clean image in Parliamentary system. **10**
- B) Answer the following (Any two):** **10**
- 1) Coalition Government and its impact on Administration
- 2) Appointment, Transfer and Removal of Judges of the High Court and Superintending Power of the Supreme Court of India
- 3) Modes of Alternative Dispute Resolutions

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**Ph.D. Course Work Examination June / July – 2017**  
**COMMERCE (Paper – II)**  
**Recent Trends in Commerce (Old)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions:** 1) *Attempt all questions.*  
2) *All questions carry equal marks.*

- Q.1**    **A)** Describe the innovative application of E-commerce? **10**
- B) Write notes on any two** **10**
- 1) E-Tailing
- 2) E-Business
- 3) Smart Card
- Q.2**    **A)** Describe how internet and web features and services support M-Commerce? **10**
- B) Write notes on any two** **10**
- 1) Social Commerce
- 2) Point of Sales
- 3) E-Auction
- Q.3**    **A)** Explain why the internet is important to business and describe how it is being used for business purposes? **10**
- B) Write notes on any two** **10**
- 1) Transaction processing
- 2) Electronic Data Interchange
- 3) Data Mining
- Q.4**    **A)** Describe the emerging business models in international trade? **10**
- B) Write notes on any two** **10**
- 1) Business Process Outsourcing
- 2) Just in Case System
- 3) Supply Chain Security
- Q.5**    **A)** Define quality. What are the various approaches used in context of quality of product as well as service? **10**
- B) Write notes on any two** **10**
- 1) Business Process Management
- 2) Service Management
- 3) Bench Marking

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**  
**COMMERCE (Paper – III)**  
**Modern Topics in Management (Old)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Discuss the current trends in strategic management. **10**
- B) Write short notes on any two:** **10**
- 1) Strategic management
  - 2) Globalization
  - 3) Strategic thinking
- Q.2 A)** Explain the importance of total quality management in business. **10**
- B) Write short notes on any two:** **10**
- 1) Prevention of Disaster
  - 2) Quality standards
  - 3) Concept of disaster management
- Q.3 A)** Explain the need, objectives and importance of Human Resource Management? **10**
- B) Write short notes on any two:** **10**
- 1) Indian management ethos
  - 2) Sources of Stress
  - 3) Managing talent
- Q.4 A)** Explain the meaning & consequences of stress. **10**
- B) Write short notes on any two:** **10**
- 1) Approaches for reducing resistance to change
  - 2) Foundations of organizational development
  - 3) Forces of change
- Q.5 A)** State the concept of Corporate governance in detail. **10**
- B) Write short notes on any two:** **10**
- 1) Business ethics
  - 2) Work life balance
  - 3) Distinction between HRD & HRM

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**Ph.D. Course Work Examination June / July – 2017**  
**COMMERCE Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in Human Resource Management**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** Human Resource Management is a basic management function pertaining to all levels of and types of management? Discuss? **10**
- B) Write short notes on any two:** **10**
- 1) Human resource and Strategic planning
  - 2) Components of manpower planning
  - 3) Perspectives of HRM
- Q.2 A)** What do you understand by training & development? Explain the methods of performance appraisal? **10**
- B) Write short notes on any two:** **10**
- 1) Ranking system
  - 2) Reference checks
  - 3) Job classification and grading method
- Q.3 A)** State the prerequisites of a good recruitment policy? **10**
- B) Write short notes on any two:** **10**
- 1) Process of training
  - 2) Gender issues in HRM
  - 3) Work life balance
- Q.4 A)** What is performance management? State the different methods performance appraisal. **10**
- B) Write short notes on any two:** **10**
- 1) Functions of HRM
  - 2) Limitations of HRM
  - 3) Scope of HRM
- Q.5 A)** State the growing importance of understanding the international HRM in detail. **10**
- B) Write short notes on any two:** **10**
- 1) Competency management
  - 2) Overseas training
  - 3) HRM in joint ventures

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**Ph.D. Course Work Examination June / July – 2017**  
**ELECTRONICS & TELECOMMUNICATION ENGINEERING (Paper – II)**  
**Recent Trends in Electronics & Telecommunication Engineering (Old)**

Day & Date: Wednesday, 28-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory and carry equal marks.***

**Section – I**

- Q.1** How to create a function file MATLAB? Write any sample program to create function file. **10**
- Q.2** **Define:** **10**
- 1) Strings
  - 2) Cell Arrays
  - 3) Nesting of Cell Arrays with one example each.
- Q.3** Write program in MATLAB to create structure. **10**
- Q.4** Explain use of GUI and sub functions used to create GUI in MATLAB environment **10**
- Q.5** Differentiate between sub function, private function and Nested function used in MATLAB. **10**

**Section – II**

- Q.6** Write a MATLAB program for Amplitude modulation and demodulation and display output waveform. **10**
- Q.7** Write MATLAB program for any Digital modulation technique with BER. **10**
- Q.8** Write MATLAB program for Designing of IIR digital filter. **10**
- Q.9** What is Kalman filter? Write MATLAB code for Kalman filter. **10**
- Q.10** Write MATLAB code for Least Mean Square (MSE) algorithm. **10**

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**Ph.D. Course Work Examination June / July – 2017**  
**ELECTRONICS & TELECOMMUNICATION ENGINEERING (Paper – III)**  
**Modern Topics in Electronics & Telecommunication Engg. (Old)**

Day & Date: Thursday, 29-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 Solve any Two** **20**
- 1) What is IP fragmentation? Why is it needed? Explain with an example?
  - 2) Compare TCP and UDP.
  - 3) What is the need for layered architecture? Explain the features of various protocols used in TCP/IP reference model.
- Q.2 Solve any Two** **20**
- 1) Explain cell delineation state diagram during Transmission of ATM Cells.
  - 2) Explain the requirements for ATM traffic and congestion control.
  - 3) Write short notes on: ATM Convergence Technology.
- Q.3 Solve any Two** **20**
- 1) How does a radio signal propagate in the wireless medium?
  - 2) Define medium access and list the different types of medium access techniques for voice oriented network.
  - 3) Compare the capacity of IS95 CDMA with AMPS FDMA and IS-136 TDMA systems for the 1 available bandwidth of 1.25MHZ. For the CDMA system, assume an acceptable SIR of 6dB, data rate of 9600 bps, voice duty cycle of 50%, effective antenna separation factor of 2.75, neighboring interference factor =1.67.
- Q.4 Solve any Two** **20**
- 1) If GSM uses a frame structure where each frame consists of eight time slots
    - a) Time duration of a bit
    - b) Time duration of slot
    - c) Time duration of a frame
    - d) How long must a user occupying a single time slot wait
  - 2) If 1MHz of the allocated spectrum is dedicated to control channels, find an equitable distribution of control channels and voice channels.
  - 3) Consider global system for mobile, which is a TDMA/FDD system that uses 25 MHz for the forward link which is broken in to radio channels of 200 KHz. If 8 channels are supported on a single radio channel and if the guard band is assumed, find the number of simulations used that can accommodated in GSM.



**Q.5 Solve any Two****20**

- 1) Discuss the features of X.25. Explain the hierarchy of X.25 protocols in the OSI model with a neat figure.
- 2) With the help of a block diagram, explain the general decoder for cyclic codes, also explain the step-wise procedure of error correction?
- 3) Describe the advantages, drawbacks, and the various transmission techniques of Infrared LANs.

**OR****Q.6 Solve any Two****20**

- 1) What is the need of audio/video standards? Explain different MPEG standards and also give their Frame Structure.
- 2) What is QoS support for internet application? Explain the control mechanism used in each class to maintain the QoS requirement.
- 3) What is a Virtual Private Network? What are the advantages of using VPN to an organization?

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**Ph.D. Course Work Examination June / July – 2017**  
**ELECTRONICS ENGINEERING (Paper – IV)**  
**Advanced Development in Soft Computing Paradigms**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

**Instructions:** 1) *All questions are compulsory.*  
 2) *Figure to the right indicates full marks.*  
 3) *Assume suitable data if necessary.*

- Q.1 Explain the following any two:** **16**
- a) Genetic Programming
  - b) Fuzzy Pattern Recognition
  - c) Fuzzy Database
- Q.2 Write short notes on the following any two:** **16**
- a) Fuzzy Sets Vs. Crisp Sets
  - b) Fuzzy Image Processing
  - c) Boltzmann Machine
- Q.3 Attempt any three questions:** **18**
- a) What is Adaptive Resonance Theory? Explain
  - b) What are the various Tools and Techniques useful for Soft computing? Write the Applications of Soft computing.
  - c) Give a detailed description of Operations on Fuzzy Sets.
  - d) Explain Fuzzy Logic in detail. Give its Applications.
- Q.4 Attempt any two questions:** **16**
- a) How interference in fuzzy logic can be achieved?
  - b) Give a brief account of all the Fuzzy algorithms.
  - c) Explain Fuzzifications and Defuzzifications concept.
- Q.5 Attempt any two questions:** **16**
- a) Give a detailed description of various Artificial Neural network architectures.
  - b) Give a detailed description of various learning techniques.
  - c) Explain Adaptive Resonance Theory in detail. Write their Applications.
- Q.6 Write short notes on the following any three:** **18**
- a) Rough Sets
  - b) Decision Tables and their Applications
  - c) Neural-Network-Based Fuzzy Systems
  - d) Genetic Algorithms for Neural Network

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**Ph.D. Course Work Examination June / July – 2017**  
**MECHANICAL ENGINEERING Paper – III (New) and Paper – IV (Old)**  
**Advanced Developments in Industrial & Production Engineering**

Day & Date: Friday, 30-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

- Instructions:** 1) Neat **diagrams** must be drawn wherever necessary.  
 2) Figures to the **right** indicate **full** marks.  
 3) Use of electronic pocket **calculator** is **allowed**.  
 4) Assume suitable data, if **necessary**.  
 5) All sub **questions** must be written together.

- Q.1 A)** The following table shows actual demand data for the final 9 months of 2007 along with forecasts that were made by simple moving average (SMA) (six months) and exponential smoothing (ES) ( $\alpha=0.2$ ). **10**

Month	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
Actual	115	111	120	99	132	120	141	116	141
SMA	104.8	108.0	111.7	111.5	109.5	114.8	116.2	120.5	121.3
ES	104.8	106.8	107.7	110.1	107.9	112.7	114.2	119.5	118.8

Calculate MAD, MSE, SFE, and TS for both forecasts for the nine months displayed. Which performed better? Make forecasts for the first three months of 2008 by both methods.

- B) Solve any two of following:** **10**
- 1) Define operation research? Explain its development?
  - 2) Explain the scope of operation research in Management?
  - 3) What is importance of strategic decision in operation?
- Q.2 A)** Define Forecasting? Write its methods in details? **10**
- B) Write note on any two:** **10**
- 1) Casual Series Method
  - 2) Time Series Model
  - 3) Process Layout
- Q.3 A)** The Rocky Mountain Arsenal, formerly a chemical warfare manufacturing site, is said to be one of the most polluted locations in the United States. Cleanup of chemical waste storage basins will involve two operations. **10**
- Operation 1: Drain and dredge basin.  
 Operation 2: Incinerate materials.  
 Management estimates that each operation will require the following amounts of time (in days):

	Storage Basin									
	A	B	C	D	E	F	G	H	I	J
Dredge	3	4	3	6	1	3	2	1	8	4
Incinerate	1	4	2	1	2	6	4	1	2	8

Management’s objective is to minimize the makespan of the cleanup operations. All storage basins are available for processing right now. First, find a schedule that minimizes the makespan. Then calculate the average flow time of a storage basin through the two operations. What is the total elapsed time for cleaning all 10 basins? Display the schedule in a Gantt machine chart?

- B) Solve any two of the following:** **10**
- 1) Explain JIT implementation system in detail.
  - 2) Write a note on lean production.
  - 3) Explain the importance of Inventory Control System.

- Q.4 A)** Explain in detail KANBAN technique. **10**

- B) Solve any two of the following:** **10**
- 1) Explain the importance of Inventory Control System.
  - 2) What is role of inventory in Industries?
  - 3) Write note on supply chain management.

- Q.5 A)** Use the sales data given below to determine: **10**
- i) the least squares trend line, and
  - ii) the predicted value for 2008 sales.

Year	Sales (Units)
2001	100
2002	110
2003	122
2004	130
2005	139
2006	152
2007	164

To minimize computations, transform the value of x (time) to simpler numbers. In this case, designate year 2001 as year 1, 2002 as year 2, etc.

- B) Solve any two of following:** **10**
- 1) Discuss in detail Gantt chart?
  - 2) Write note on Project Scheduling?
  - 3) Write note on Project Controlling.

Seat No.	
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**Ph.D. Course Work Examination June / July – 2017**

**MARATHI (Paper – I)**

**Research Methodology & Information Communication Technology (ICT)**

संशोधनपध्दती व माहिती-तंत्रज्ञान

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

सूचना: सर्व प्रश्न आवश्यक आहे.

- प्र. 1 अ) साहित्य संशोधन व वैज्ञानिक, सामाजिक शास्त्रांच्या संशोधनातील साम्यभेद स्पष्ट करा. **10**
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा. **10**
- 1) क्षेत्रिय सर्वेक्षण पध्दतीचे स्वरूप सांगा.
  - 2) प्रायोगिक संशोधन पध्दतीच्या मर्यादा सांगा.
  - 3) संशोधन संकल्पना स्पष्ट करा.
- प्र.2 अ) साहित्य रचना, आशय, वाङ्मयप्रकार, कालखंड व लेखक यांचे संशोधनातील महत्व विशद करा. **10**
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा. **10**
- 1) भाषाभ्यासाच्या विविध पध्दती सांगा.
  - 2) अनुवादीत साहित्य संशोधनाची उपयुक्तता स्पष्ट करा.
  - 3) तौलनिक साहित्य संशोधनाचे स्वरूप स्पष्ट करा.
- प्र.3 अ) विविध संशोधन पध्दतींचा परिचय करून द्या. **10**
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा. **10**
- 1) बोली अभ्यासाचे महत्व स्पष्ट करा.
  - 2) लोकसाहित्य संशोधनाचे महत्व सांगा.
  - 3) विशिष्ट साहित्यकृतीच्या संशोधनाचे महत्व सांगा.
- प्र.4 अ) संशोधकाच्या अंगी आवश्यक असणारे महत्वाचे गुण स्पष्ट करा. **10**
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा. **10**
- 1) प्रबंधाच्या रुपरेषेची आवश्यकता स्पष्ट करा.
  - 2) परिशिष्टांची उपयुक्तता स्पष्ट करा.
  - 3) संदर्भ, ग्रंथ सुची, विनयनाम सुची यांची उपयुक्तता स्पष्ट करा.
- प्र.5 अ) साहित्य संशोधनातील माहिती तंत्रज्ञानाचे महत्व स्पष्ट करा. **10**
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा. **10**
- 1) मराठी साहित्य संशोधनासाठी उपयुक्त सर्च इंजिने कोणती?
  - 2) ई-जर्नलचे संशोधनातील महत्व सांगा.
  - 3) साहित्य संशोधनातील संगणकाची उपयुक्तता स्पष्ट करा.

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**Ph.D. Course Work Examination June / July – 2017**

**ENGLISH (Paper – I)**

**Research Methodology & Information Communication Technology (ICT)**

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** Write a detailed note on the difference between literary research and social research. **10**
- B) Answer Any Two:** **10**
- 1) What is practical review?
  - 2) Comment on the nature and scope of research.
  - 3) What is scientific research?
- Q.2 A)** Explain the significance of research methodology. **10**
- B) Answer Any Two:** **10**
- 1) A short note on historical research methodology.
  - 2) Analyze the experimental research methodology.
  - 3) Make a statement on the role of the field work in research.
- Q.3 A)** Elucidate the various methods of language study. **10**
- B) Answer Any Two:** **10**
- 1) What is the scientific study of language?
  - 2) Comment on the method of research in dialect.
  - 3) Explain the role of language in literary research.
- Q.4 A)** Prepare a note on the terminologies of research. **10**
- B) Answer Any Two:** **10**
- 1) What is the format of thesis writing?
  - 2) Make a note on the format of research.
  - 3) Prepare a bibliography of the following items in a standard format.
- Q.5 A)** Make an elaborate statement about the use of computer applications in research. **10**
- B) Answer Any Two:** **10**
- 1) What is the role of e-journals in research?
  - 2) What are the key terms of ICT?
  - 3) Why computer applications are necessary in research?

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**Ph.D. Course Work Examination June / July – 2017**

**HINDI (Paper – I)**

**Research Methodology & Information Communication Technology (ICT)**

अनुसंधान प्रविधि, जानकारी और तकनीक

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

सूचना: 1) सभी प्रश्न अनिवार्य हैं।

2) दाईं ओर प्रश्न के पूर्णांक हैं।

- |        |    |  |    |
|--------|----|--|----|
| प्र. 1 | अ) | अनुसंधान के उद्देश्य पर प्रकाश डालिए।  | 10 |
|        | ब) | <u>किन्हीं दो</u> के संक्षिप्त उत्तर लिखिए।                                      | 10 |
|        |    | 1) अनुसंधान की संकल्पना।   |    |
|        |    | 2) वर्णनात्मक अनुसंधान।  |    |
|        |    | 3) अनुसंधान-क्षेत्र।   |    |
| प्र.2  | अ) | भाषा-अनुसंधान का परिचय दीजिए।  | 10 |
|        | ब) | <u>किन्हीं दो</u> के संक्षिप्त उत्तर लिखिए।                                      | 10 |
|        |    | 1) ऐतिहासिक अनुसंधान।  |    |
|        |    | 2) काल विशेष का अनुसंधान।  |    |
|        |    | 3) साहित्यिक अनुसंधान।   |    |
| प्र.3  | अ) | प्रबंध लेखन का विवेचन कीजिए।   | 10 |
|        | ब) | <u>किन्हीं दो</u> के संक्षिप्त उत्तर लिखिए।                                      | 10 |
|        |    | 1) परिशिष्ट लेखन।  |    |
|        |    | 2) संदर्भ ग्रंथ सूची।  |    |
|        |    | 3) तुलनात्मक अनुसंधान।   |    |
| प्र.4  | अ) | अनुसंधान कार्य में सूचना प्रौद्योगिकी कैसे उपयुक्त सिद्ध हो सकती है? विशद कीजिए। | 10 |
|        | ब) | <u>किन्हीं दो</u> के संक्षिप्त उत्तर लिखिए।                                      | 10 |
|        |    | 1) लोक साहित्य।  |    |
|        |    | 2) शोध विषय का सामग्री – संकलन।  |    |
|        |    | 3) अनुवाद और अनुसंधान।   |    |
| प्र.5  | अ) | अनुसंधान की पारिभाषिक शब्दावली का विवेचन कीजिए।                                  | 10 |
|        | ब) | <u>किन्हीं दो</u> के संक्षिप्त उत्तर लिखिए।                                      | 10 |
|        |    | 1) शोध-क्षेत्र में ई मेल का महत्व।   |    |
|        |    | 2) पावर पॉइंट प्रेजेंटेशन।   |    |
|        |    | 3) सर्च इंजिन।   |    |

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**Ph.D. Course Work Examination June / July – 2017  
SCIENCE (PAPER – I)**

**Research Methodology & Information Communication Technology (ICT)**

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1**    **A)** Write in detail process of research with reference to planning of experiment and data collection. **10**
- B) Answer Any Two:** **10**
- 1) Write about preparation of Thesis.
- 2) Discuss the analysis of variance (ANOVA) and Covariance (ANCOA).
- 3) Write on Applications of Computer in research.
- Q.2**    **A)** Write in detail block schematic scientific approach with inductive and deductive logic schemes. **10**
- B) Answer Any Two:** **10**
- 1) Write on ISSN.
- 2) Write in detail patent filing.
- 3) Discuss in detail Results and Discussion.
- Q.3**    **A)** Discuss in detail Criteria of good research, types of research and purpose & process of literature review. **10**
- B) Answer Any Two:** **10**
- 1) What is Impact factor? Write on calculation of Impact factor.
- 2) Write on presentation of research outcome as a research paper.
- 3) Discuss the scientific explanation and limits of scientific explanation.
- Q.4**    **A)** Write in detail statistical techniques for analyzing data. **10**
- B) Answer Any Two:** **10**
- 1) What is citation index? Write on SCOPUS citation index.
- 2) Write about MS PowerPoint.
- 3) Discuss chi-square test.
- Q.5**    **A)** Discuss various search engines and formulation of search statement. **10**
- B) Answer Any Two:** **10**
- 1) Write on various sampling methods.
- 2) Write is h-index? Write on determination of h-index.
- 3) Write on framing of questionnaire.





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**M.Phil / Ph.D. Course Work Examination June / July – 2017**  
**EDUCATION (Paper – I)**

**Research Methodology & Information Communication Technology (ICT)**

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** What are the various steps of research proposal? Explain with example. **15**
- B) Write short notes on any Two:** **10**
- 1) Review of related research
  - 2) Research objectives
  - 3) Hypothesis
- Q.2 A)** What do you mean by Qualitative research? State the assumptions of qualitative research, with examples. **15**
- B) Write short notes on any Two:** **10**
- 1) Paradigm
  - 2) Features of qualitative researcher
  - 3) Importance of Graphs and Tabulation
- Q.3 A)** What are the various methods of data collection? Which method is more suitable for qualitative research? **15**
- B) Write short notes on any Two:** **10**
- 1) Differentiate 't' score and 'z' score
  - 2) Excavation
  - 3) ANOVA and ANCOVA
- Q.4 A)** What do you mean by e-information project? What is the nature of e-information project? Explain with example. **15**
- B) Write short notes on any Two:** **10**
- 1) Types of various open educational resources (OER)
  - 2) Importance of E-submission
  - 3) Patents & its procedure

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**Ph.D. Course Work Examination June / July – 2017**

**LAW (Paper – I)**

**Research Methodology & Information Communication Technology (ICT)**

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** What is a Research Problem? Define the main issues which should receive the attention of the Research in formulating the Research Problem. Give suitable examples to elucidate your points. **10**
- B) Short notes (On any two):** **10**
- 1) Historical Research
  - 2) Project Method
  - 3) Purpose of Report
- Q.2 A)** Why probability sampling is generally preferred in comparison to non-probability sampling? Explain the procedure of selecting a simple random sample. **10**
- B) Short notes (On any two):** **10**
- 1) Case Study Method
  - 2) Modes of Legal Research
  - 3) Scope and Nature of Legal Research
- Q.3 A)** What is a hypothesis? What characteristics it must possess in order to be a good Research hypothesis? What do you know about null and alternative hypothesis? **10**
- B) Short notes (On any two):** **10**
- 1) Significance of Legal Research
  - 2) Legal Impact Analysis
  - 3) Secondary Sources
- Q.4 A)** How the Educational and Research Resources on Net will help case study, On-line tutorials and Lectures and so on. **10**
- B) Short notes (On any two):** **10**
- 1) Net Surfing
  - 2) Citation Index
  - 3) ISI Impact factor
- Q.5 A)** Explain the concept and meaning of Internet, its brief history and application. **10**
- B) Short notes (On any two):** **10**
- 1) Incorrect application of Impact factor
  - 2) Computer Care and Virus
  - 3) Patent Amendment Act 2005

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**Ph.D. Course Work Examination June / July-2017**

**COMMERCE (Paper – I) (Old)**

**Research Methodology & Information Communication Technology (ICT)**

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1 A)** What is research? State the research process and steps in it in detail. **10**
- B) Write short notes on any two:** **10**
- 1) Errors in research
  - 2) Chi-square Test
  - 3) Formats of Report writing
- Q.2 A)** Discuss in detail the various issues of information technology for management. **10**
- B) Write short notes on any two:** **10**
- 1) Impact of ICT on educational social & economic development
  - 2) ICT related concepts and Technologies
  - 3) Information Processing Cycle
- Q.3 A)** What is report writing? Which are the Pre-Writing considerations? **10**
- B) Write short notes on any two:** **10**
- 1) Analysis of variance
  - 2) Measures of central tendencies
  - 3) Assessing information from Internet
- Q.4 A)** What are the uses of Internet in Research? Explain. **10**
- B) Write short notes on any two:** **10**
- 1) Editing Text in Word Processing Document
  - 2) Citation Index
  - 3) Formatting and editing information
- Q.5 A)** Which are the different research designs? Explain in detail. **10**
- B) Write short notes on any two:** **10**
- 1) Formats of Report Writing
  - 2) Formatting Word Processing Document
  - 3) Formatting and Editing Information

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**Ph.D. Course Work Examination June / July-2017**  
**COMMERCE (Paper – I)**  
**Research Methodology (New)**

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

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

- Q.1**    **A)** What do you mean by Scientific Research? Explain the characteristics of scientific method. **10**
- B)** **Write short notes on any two:** **10**
- 1) Census and Sample Method
- 2) Types of Hypothesis
- 3) Steps of scientific research
- Q.2**    **A)** What are the sources of research problems? Explain the process of problem formulation. **10**
- B)** **Write short notes on any two:** **10**
- 1) Law of statistical regularity
- 2) Errors in sampling
- 3) Assumptions of scientific method
- Q.3**    **A)** What are the steps involved in applying Chi-Square Test in research? **10**
- B)** **Answer the following (any two):** **10**
- 1) Sources of Hypothesis
- 2) Regression
- 3) Use of quantitative Method in research
- Q.4**    **A)** What is the use of web -2 tools for research? Explain the word Processing? **10**
- B)** **Write short notes on any two:** **10**
- 1) Testing of Hypothesis
- 2) Types and sources of data
- 3) Use of SPSS
- Q.5**    **A)** What are the methods of Sampling? Explain in detail **10**
- B)** **Write short notes on any two:** **10**
- 1) Data Processing
- 2) Use of Mathematical tools
- 3) Non-Parametric – test

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**Ph.D. Course Work Examination June / July-2017**  
**ENGINEERING FACULTY (Paper – I) (Common Paper)**  
**Research Methodology & Information Communication Technology (ICT)**

Day & Date: Tuesday, 27-06-2017

Max. Marks: 100

Time: 11.00 AM to 02.00 PM

***Instructions: All questions are compulsory.***

- Q.1 A)** What is research? Compare basic research, applied research and action research considering the following points like objectives of the research, proposal, tools and findings of the research. **10**
- B) Solve any two questions from the following:** **10**
- 1) What are various methods of linear regression analysis used for any research problem?
  - 2) What is impact factor and how it is calculated at international level?
  - 3) Explain different ways by which the data can be collected for research purpose.
- Q.2 A)** Explain the significance of research report and narrate the various steps involved in writing such a report. **10**
- B) Solve any two questions from the following:** **10**
- 1) Explain in brief various forms of research publications.
  - 2) Differentiate between collection of data through questionnaire and schedule.
  - 3) While referencing to multivariate analysis list out the possible analysis processes likely to be used in research.
- Q.3 A)** Explain the following terms with respect to processing and analysis of data: **10**
- i) Cross tabulation
  - ii) Discriminate analysis
  - iii) Coefficient of Contingency
- B) Solve any two questions from the following:** **10**
- 1) State the reasons why sampling is used in the context of research studies.
  - 2) How to write a good research plan. What methods are available which suggest for writing a good research plan?
  - 3) Explain the meaning of following in context of research design:
    - i) Extraneous variables
    - ii) Confounded relationship
    - iii) Research hypothesis

- Q.4 A)** Explain how would you work the following statically measures often used by researchers' **10**
- i) Coefficient of Skewness
  - ii) Regression equation of X on Y
  - iii) Arithmetic average
- B) Solve any two questions from the following: 10**
- 1) How to decide the sample size in any data analysis problem.
  - 2) What is the role of Computer in research? How does e-resource help the researchers in their research work?
  - 3) What factors needs to be considered by the researchers to select the research.
- Q.5 A)** How are the mathematical models classified, What is mathematical modeling and simulation and how it is important to researchers? **10**
- B) Solve any two questions from the following: 10**
- 1) What different sources are available to the researchers for reviewing the literature for his research work?
  - 2) Define the following terms:
    - i) Risk assessment
    - ii) Reliability
    - iii) Sustainability and
    - iv) Uncertainty
  - 3) List out various agencies at National and International levels available who help in e-filing patents for the individuals.