



SLR-BP – 1

Seat  
No.

**Ph.D. Course Work Examination, 2016**  
**MARATHI**  
**Paper – II : मराठी साहित्यातील नवे प्रवाह**

Day and Date : Wednesday, 10-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

१. अ) वाङ्मयीन चळवळी का निर्माण होतात. सोदाहरण स्पष्ट करा. **10**
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : **10**
- १) स्वातंत्र्योत्तर ग्रामीण जीवन आणि ग्रामीण कादंबरी.
- २) अरुण कोलटकरांची कविता.
- ३) नटसम्राट.
२. अ) भालचंद्र नेमाडे यांच्या कादंबऱ्यांचे विशेष मांडा. **10**
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : **10**
- १) उद्धव शेळके यांची ग्रामीण कथा.
- २) नवनैतिकता.
- ३) ब-बळीचा, राजन गवस.
३. अ) दलित स्त्रियांच्या आत्मकथनाचे विशेष लिहा. **10**
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : **10**
- १) दलित साहित्यातील आत्मभान.
- २) बाबुराव बागुल यांची कथा.
- ३) दलित साहित्याची प्रेरणा.

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४. अ) स्त्रीवादी साहित्याची भूमिका मांडा. 10
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : 10
- १) विभावरी शिरूरकरांचे कथावाङ्मय.
- २) आहे मनोहरी तरी.
- ३) स्त्रीयांच्या कवितांतील जाणीवा.
५. अ) आदिवासी साहित्य प्रवाहाची वाटचाल स्पष्ट करा. 10
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : 10
- १) झेलझपाट.
- २) आदिवासींची आत्मकथने.
- ३) आदिवासी कवितेचे विशेष.
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SLR-BP – 2

Seat No.	
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**Ph.D. Course Work Examination, 2016  
MARATHI (Old)**

**पेपर – III : 'मराठी साहित्यातील नव्या संकल्पना'**

Day and Date : Thursday, 11-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

१. अ) संप्रदाय म्हणजे काय ? साहित्यात ते कसे अस्तित्वात येतात ? १०
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : १०
- १) वास्तववाद वस्तुनिष्ठ दृष्टीचा स्वीकार कसा करतो ?
- २) वास्तववाद आणि सौंदर्यवाद.
- ३) वास्तववादाचे विशेष नमूद करा.
२. अ) अस्तित्वादाची पाश्चात्य पार्श्वभूमी सविस्तर लिहा. १०
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : १०
- १) अस्तित्वादा आणि तत्त्वज्ञान.
- २) अस्तित्वादाचे स्वरूप स्पष्ट करा.
- ३) मराठीतील अस्तित्वादी वाङ्मयाची ओळख करून द्या
३. अ) आधुनिकतावाद आणि उत्तर आधुनिकतावादाचे स्वरूप स्पष्ट करा. १०
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : १०
- १) आधुनिकतावाद ही संज्ञा स्पष्ट करा.
- २) उत्तर आधुनिकतावादाचे विशेष सांगा.
- ३) मराठीतील आधुनिकतावादी आणि उत्तर आधुनिकवादी साहित्याची थोडक्यात ओळख करून द्या.

P.T.O.



४. अ) देशीवादाचे स्वरूप स्पष्ट करा. १०
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : १०
- १) मराठीत देशीवाद कसा रुजला ?
- २) साहित्यातील देशीयता.
- ३) नेमाडे आणि देशीवाद.
५. अ) संरचनावाद या समीक्षाप्रणालीची ओळख करून द्या. १०
- ब) लघुत्तरी प्रश्न (कोणतेही दोन) : १०
- १) चिन्हव्यवस्था आणि संरचनावाद.
- २) संरचनावादी साहित्यशास्त्र.
- ३) संरचनावादाच्या मर्यादा लिहा.
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**Ph.D. Course Work Examination, 2016**  
**MARATHI Paper – III (New) and Paper – IV (Old)**  
**A) मध्ययुगीन मराठी साहित्य आणि संशोधन**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

१. अ) मध्ययुगीन पंथीय मराठी साहित्याचा परिचय करून द्या. १०
- ब) लघुत्तरी प्रश्न सोडवा. (कोणतेही दोन). १०
- १) पंडिती वाङ्मयाचे शैली विशेष नोंदवा.
- २) ओवी आणि भारुडाच्या रूपबंधाचे स्वरूप विशेष स्पष्ट करा.
- ३) ख्रिस्ती वाङ्मयाचे मराठी साहित्यातील योगदान विशद करा.
२. अ) समाजमनाची मशागत करण्यात संत साहित्याची महत्वाची भूमिका आहे, चर्चा करा. १०
- ब) लघुत्तरी प्रश्न सोडवा. (कोणतेही दोन). १०
- १) साहित्य आणि संस्कृती यांच्यातील अनुबंध उलघडून दाखवा.
- २) संत साहित्यातील परिवर्तनवादी विचार थोडक्यात स्पष्ट करा.
- ३) पोवाडा आणि लावणीच्या रूपबंधाचे स्वरूप विशेष सांगा.
३. अ) पंडिती वाङ्मयनिर्मितीमागील प्रेरणा सांगून त्याचे स्वरूप आणि विशेष स्पष्ट करा. १०
- ब) लघुत्तरी प्रश्न सोडवा. (कोणतेही दोन). १०
- १) शाहिरी वाङ्मयाचे स्वरूप थोडक्यात विशद करा.
- २) बखरीतील चरित्रात्मकता थोडक्यात सांगा.
- ३) संत साहित्यातील सामाजिकता थोडक्यात स्पष्ट करा.

P.T.O.



४. अ) शाहिरी वाङ्मयाची राजकीय व सामाजिक पार्श्वभूमी सविस्तरपणे विशद करा. १०
- ब) लघुत्तरी प्रश्न सोडवा. (कोणतेही दोन). १०
- १) संपादनातील पाठचिकित्सा सविस्तर लिहा.
- २) मुस्लीम वाङ्मयाचे मराठी साहित्यातील योगदान स्पष्ट करा.
- ३) शाहिरी वाङ्मयातील प्रबोधनाचे स्वरूप विशद करा.
५. अ) बखर वाङ्मयाचे स्वरूप सांगून त्याची वैशिष्ट्ये विशद करा. १०
- ब) लघुत्तरी प्रश्न सोडवा. (कोणतेही दोन). १०
- १) आख्यानकाव्याचे विशेष नोंदवा.
- २) संत साहित्यातील संस्कारसंपन्नता थोडक्यात विशद करा.
- ३) जैन वाङ्मयातून आविष्कृत झालेल्या मूल्यांचा आढावा घ्या.
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**Ph.D. Course Work Examination, 2016**  
**ENGLISH**  
**Recent Trends in Critical Theories (Paper – II)**

Day and Date : Wednesday, 10-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) “Stylistics makes literary criticism objectively verifiable”. Discuss. 10  
B) Write short notes on **any two** of the following : 10
  - i) Style as Choice
  - ii) Types of Deviation.
  - iii) Parallelism.
  
2. A) Bringout the relevance of Feminism and Feminist literary studies. 10  
B) Write short notes on **any two** of the following : 10
  - i) Marxist Feminism.
  - ii) Radical Feminism.
  - iii) Contribution of Kristeva to Feminist Studies.
  
3. A) Comment on the view that ‘the literary text is a time-and place-bound verbal construction that is always in one way or another political’ in the light of New Historicism and Cultural Materialism. 10  
B) Write short notes on **any two** of the following : 10
  - i) ‘Discursive Practices’ and New Historicism and Cultural Materialism.
  - ii) Culture politics.
  - iii) Concept of culture in New Historicism and Cultural Materialism.

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4. A) “Cognitive Poetics is essentially ‘a way of thinking’ about literature rather than a framework in itself.” Discuss. **10**
- B) Write short notes on **any two** of the following : **10**
- i) Cognitive Rhetoric.
  - ii) Early criticism on New Aestheticism.
  - iii) Queer Theory.
5. A) Discuss the view that Ecocriticism is global and local at one and the same time. **10**
- B) Write short notes on **any two** of the following : **10**
- i) Environmentalism.
  - ii) Culture and Nature.
  - iii) Romanticism and Ecocriticism.
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**Ph. D. Course Work Examination, 2016**  
**ENGLISH**  
**Paper – III**  
**(Modern Trends in Drama, Novel and Poetry)**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Discuss the Symbolic Movement. 10
- B) Write a note on **any two** of the followings. 10
- i) Realism
- ii) Surrealism
- iii) Theatre of Absurd.
2. A) What are the stylistic conventions of Epic Theatre. 10
- B) Write a note on **any two** of the followings : 10
- i) Modern Realistic Drama
- ii) Dadaist Movement
- iii) Imagism.
3. A) Discuss the theme of the *Waiting for Godot*. 10
- B) Write a note on **any two** of the followings : 10
- i) Tragedy in *Mother Courage and Her Children*.
- ii) Katrin
- iii) Yvette Pottier.

P.T.O.



4. A) How do Stephen's parents affect his development throughout the novel ? **10**  
How does he react to his father's patriotic nostalgia ?
- B) Write a note on **any two** of the followings : **10**
- i) Depiction of racial relationships in *The Grass is Singing*.
  - ii) Slatter
  - iii) Mary Turner.
5. A) Discuss theme of Eliot's *The Waste Land*. **10**
- B) Write a note on **any two** of the followings : **10**
- i) Symbol of the Hawk
  - ii) Theme of "Pike"
  - iii) Metaphor of the Fox.
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**Ph.D. Course Work Examination, 2016**  
**HINDI**  
**Paper – II : हिन्दी साहित्य : नए प्रवाह (Old)**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

**सूचनाएँ :** 1) सभी प्रश्न अनिवार्य हैं ।  
2) दाईं ओर लिखे अंक प्रश्नों के गुण दर्शाते हैं ।

1. अ) 'आधुनिक हिन्दी साहित्य स्वतन्त्रता आंदोलन से बहुत अधिक प्रभावित रहा है।' इस कथन की सत्यता सिद्ध कीजिए । 10

**अथवा**

आर्य समाज की विचारधारा ने आधुनिक हिन्दी साहित्य को किस तरह प्रभावित किया है ? स्पष्ट कीजिए ।

- आ) निम्नलिखित विषयों में से किन्हीं दो पर टिप्पणियाँ लिखिए । 10
- 1) वैदिक दर्शन
  - 2) बौद्ध दर्शन
  - 3) ईसाई मिशनरी ।

2. अ) वर्तमान संदर्भों में राष्ट्रीयता और अंतर्राष्ट्रीयता की अवधारणा पर प्रकाश डालिए । 10

**अथवा**

पुनर्जागरण की संकल्पना स्पष्ट करते हुए हिन्दी साहित्य पर उसके प्रभाव का विवेचन कीजिए ।

- आ) निम्नलिखित विषयों में से किन्हीं दो पर टिप्पणियाँ लिखिए । 10
- 1) आधुनिकता बोध
  - 2) औद्योगिक संस्कृति
  - 3) उत्तर आधुनिकतावाद ।

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3. अ) मार्क्सवादी विचारधारा के प्रमुख सिद्धांतों का मूल्यांकन कीजिए । 10

**अथवा**

अंबेडकरवाद की मूल प्रवृत्तियों को रेखांकित कीजिए ।

आ) निम्नलिखित विषयों में से किन्हीं दो पर टिप्पणियाँ लिखिए । 10

- 1) गांधीवाद के मूल सिद्धान्त
- 2) अस्तित्ववाद
- 3) अंतश्चेतनावाद ।

4. अ) दलित विमर्श की मूल विचारधारा पर प्रकाश डालिए । 10

**अथवा**

‘आदिवासी विमर्श में अपने अस्तित्व की रक्षा के लिए संघर्ष प्रमुख रूप में उभरकर आया है’ – विवेचन कीजिए ।

आ) निम्नलिखित विषयों में से किन्हीं दो पर टिप्पणियाँ लिखिए । 10

- 1) मण्डल आयोग की प्रमुख सिफारिशें
- 2) स्त्री विमर्श के मूल सिद्धान्त
- 3) घुमंतू जतियों का जागरण ।

5. अ) चार्वाक दर्शन की प्रमुख विचारधारा को स्पष्ट कीजिए । 10

**अथवा**

मनोविश्लेषणवाद की विशेषताएँ समझाइए ।

आ) निम्नलिखित विषयों में से किन्हीं दो पर टिप्पणियाँ लिखिए । 10

- 1) जैन दर्शन
- 2) सत्यशोधक समाज
- 3) इस्लाम दर्शन ।



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Ph.D. Course-Work Examination, 2016

HINDI

Paper – II : हिन्दी साहित्य : आलोचना और विमर्श (New)

Day and Date : Wednesday, 10-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

सूचनाएं : 1) सभी प्रश्न अनिवार्य हैं ।  
2) दाईं ओर लिखें अंक प्रश्नों के गुण दर्शाते हैं ।

1. अ) 'अस्तित्ववाद का हिन्दी साहित्य पर प्रभाव' -विवेचन कीजिए। 10

अथवा

आलोचना का स्वरूप स्पष्ट करते हुए मार्क्सवादी आलोचना पर प्रकाश डालिए।

आ) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए । 10

- 1) आंचलिकता के भेद ।
- 2) ग्राम बोध ।
- 3) समाजशास्त्रीय आलोचना ।

2. अ) साहित्य का मनोवैज्ञानिक अध्ययन' का स्वरूप स्पष्ट कीजिए । 10

अथवा

'हिन्दी साहित्य में आदिवासी विमर्श' - का विवेचन कीजिए ।

आ) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए । 10

- 1) महानगर बोध का स्वरूप ।
- 2) मार्क्सवाद की विशेषताएं ।
- 3) घुमंतू जातियों का जागरण ।

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3. अ) हिन्दी साहित्य पर अंबेडकरवाद का प्रभाव स्पष्ट कीजिए । 10

अथवा

भारतीय स्वाधीनता आंदोलन में हिन्दी का योगदान विवेचन कीजिए ।

आ) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए । 10

- 1) तुलनात्मक अध्ययन का स्वरूप ।
- 2) सांस्कृतिक अध्ययन ।
- 3) गांधीवाद का स्वरूप, तत्व ।

4. अ) साहित्य का इतिहास दर्शन –एक उपलब्धि–स्पष्ट कीजिए । 10

अथवा

उत्तर आधुनिकता का स्वरूप बताकर महत्व विशद कीजिए ।

आ) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए । 10

- 1) भूमंडलीकरण ।
- 2) नव उपभोक्तावाद ।
- 3) आधुनिकता बोध ।

5. अ) साहित्य का समाजशास्त्रीय अध्ययन की आवश्यकता स्पष्ट कीजिए । 10

अथवा

हिन्दी साहित्य में स्त्री विमर्श का महत्व स्पष्ट कीजिए ।

आ) निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए । 10

- 1) मनोविश्लेषणवादी आलोचना ।
- 2) तुलनात्मक अध्ययन के आयाम ।
- 3) मंडल आयोग और जनजागरण ।



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Ph.D. Course Work (Old) Examination, 2016

HINDI (प्रश्नपत्र-३)

हिंदी साहित्य : आलोचना के नए आयाम

Day and Date : Thursday, 11-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

१. अ) साहित्य और आलोचना की विशेषताएँ स्पष्ट कीजिए। १०  
आ) निम्नलिखित में से **किन्ही दो** पर टिप्पणियाँ लिखिए। १०  
i) आ. रामचंद्र शुक्ल  
ii) नामवर सिंह  
iii) रमणिका गुप्ता।
२. अ) समाजशास्त्रीय आलोचना की विशेषताओं का विवेचन कीजिए। १०  
आ) निम्नलिखित में से **किन्ही दो** पर टिप्पणियाँ लिखिए। १०  
i) मनोविश्लेषणवादी आलोचना  
ii) शैलीवैज्ञानिक आलोचना  
iii) मार्क्सवादी आलोचना।
३. अ) साहित्य के मनोवैज्ञानिक अध्ययन पर प्रकाश डालिए। १०  
आ) निम्नलिखित में से **किन्ही दो** पर टिप्पणियाँ लिखिए। १०  
i) इतिहास दर्शन  
ii) साहित्य का वैज्ञानिक बोध  
iii) साहित्य का समाजशास्त्र।

P.T.O.



४. अ) हिंदी साहित्य में ग्रामबोध का विवेचन कीजिए। १०  
आ) निम्नलिखित में से **किन्ही दो** पर टिप्पणियाँ लिखिए। १०  
i) नवभांडवलदार  
ii) आंचलिकता  
iii) भूमंडलीकरण ।
५. अ) तुलनात्मक अध्ययन की विशेषताएँ स्पष्ट कीजिए। १०  
आ) निम्नलिखित में से **किन्ही दो** पर टिप्पणियाँ लिखिए। १०  
i) भाषा के संदर्भ में साहित्य विधा का तुलनात्मक अध्ययन ।  
ii) साहित्यकार के संदर्भ में वैचारिक दृष्टीकोन का तुलनात्मक अध्ययन ।  
iii) युग के संदर्भ में साहित्य विधा का तुलनात्मक अध्ययन ।
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Ph.D. Course Work Examination, 2016  
HINDI (Paper – III)  
हिंदी (प्रश्नपत्र-3)  
हिंदी साहित्य विधा – (अ) हिंदी काव्य (New)

Day and Date : Thursday, 11-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

- सूचनाएँ :** 1) किन्हीं चार प्रश्नों के उत्तर लिखिए।  
2) सभी प्रश्नों को समान अंक हैं।  
3) दाईं ओर लिखे हुए अंक प्रश्न के पूर्णांक दर्शाते हैं।

1. काव्य की प्रमुख परिभाषाओं को देकर तत्त्वों पर प्रकाश डालिए। 25
2. 'तुलसीदास' कविता के आधार पर तुलसीदास का परिचय दीजिए। 25
3. 'अंधेरे में' कविता के वस्तु और शिल्प सौंदर्य को स्पष्ट कीजिए। 25
4. 'अकाल में सारस' काव्य संग्रह के कथ्य पर प्रकाश डालिए। 25
5. खंडकाव्य के तत्वों के आधार पर 'द्रौपदी' खंडकाव्य की समीक्षा कीजिए। 25
6. निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर लिखिए। 25
  - i) महाकाव्य के लक्षण।
  - ii) राम की शक्तिपूजा।
  - iii) 'द्रौपदी' खंडकाव्य की द्रौपदी।
  - iv) 'अकाल में सारस' संग्रह में संकलित अकाल सम्बन्धी कविताएँ।





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**Ph.D. Course Work Examination, 2016**  
**HINDI (Paper – III)**  
**Hindi Sahitya Vidha**  
**B) Hindi Katha Sahitya (New)**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

**सूचनाएँ :** 1) केवल चार प्रश्नों के उत्तर लिखने हैं ।  
2) सभी प्रश्नों का समान अंक है ।

1. उपन्यास की परिभाषा देकर उसके तत्वों को समझाइए । 25
  2. “रागदरबारी” की कथावस्तु अपने शब्दों में लिखिए । 25
  3. यशपाल की कहानियों में चित्रित समस्याओं का विवेचन कीजिए । 25
  4. “कलिकथा : वाया बायपास” की तात्विक समीक्षा कीजिए । 25
  5. राजेंद्र यादव की कहानियों नारी पात्रों की विशेषताएँ लिखिए । 25
  6. निम्नलिखित में से किन्हीं दो के उत्तर लिखिए । 25
    - 1) कहानी की परिभाषा ।
    - 2) प्रेमचंदकालीन कहानी ।
    - 3) “सोनामाटी” के पुरुष पात्र ।
    - 4) मुद्राराक्षस द्वारा संपादित कहानियों में अभिव्यक्त दलित जीवन ।
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**Ph.D. Course Work Examination, 2016**  
**HINDI (Paper – IV)**  
**Hindi Sahitya Vidha**  
**A) Hindi Kavya**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

**सूचनाएँ :** 1) सभी प्रश्न अनिवार्य हैं ।  
2) सभी प्रश्नों का समान अंक है ।

1. क) “भूमिजा” का तात्विक विवेचन कीजिए । 10

अथवा

ख) किन्ही दो के उत्तर संक्षेप में दे । (2×5=10)

- 1) प्रगतिशील कवि नागार्जुन ।
- 2) नागार्जुन के काव्य की प्रमुख विशेषताएँ ।
- 3) नागार्जुन के काव्य की प्रासंगिकता ।

2. क) निराला की “राम की शक्तिपूजा” का भाव पक्ष स्पष्ट कीजिए । 10

अथवा

ख) किन्ही दो के उत्तर संक्षेप में दे । (2×5=10)

- 1) “तुलसीदास” का शिल्प विधान ।
- 2) “कुकुरमुत्ता” में अभिव्यक्त वैचारिक पक्ष ।
- 3) छायावादी कवि के रूप में निराला की कविताओं का मूल्यांकन ।

P.T.O.



3. क) काव्य के तत्व विशद कीजिए । 10

अथवा

ख) किन्ही दो के उत्तर संक्षेप में दे । (2×5=10)

- 1) कविता: कल्पना तत्व ।
- 2) कविता के कला पक्ष के प्रमुख घटक ।
- 3) प्रबंध काव्य की विशेषताएँ ।

4. क) जयप्रकाश कर्दम द्वारा लिखित “गूंगा नहीं था मैं ” के आधार पर प्रस्तुत काव्य संग्रह की प्रमुख प्रवृत्तियों पर प्रकाश डालिए । 10

अथवा

ख) किन्ही दो के उत्तर संक्षेप में दे । (2×5=10)

- 1) प्रमुख पाँच दलित साहित्यकार और उनकी एक रचना का परिचय ।
- 2) “गूंगा नहीं था मैं” की शीर्षक सार्थकता ।
- 3) कर्दम की दलित चेतना का विवेचन कीजिए ।

5. क) “अंधेरे में ” कविता के भाव पक्ष को स्पष्ट कीजिए । 10

अथवा

ख) किन्ही दो के उत्तर संक्षेप में दे । (2×5=10)

- 1) मुक्तिबोध की कविता का कला पक्ष ।
  - 2) “सरोज स्मृति” का शोकगीत तत्व ।
  - 3) मुक्तिबोध के काव्य की प्रमुख विशेषताएँ ।
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**Ph.D. Course Work Examination, 2016  
HINDI (Paper – iv) Hindi Sahitya Vidha  
B) Hindi Katha Sahitya**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

**सूचनाएँ :** 1) सभी प्रश्न अनिवार्य हैं।  
2) सभी प्रश्नों का समान अंक है।

1. अ) उपन्यास का स्वरूप स्पष्ट करते हुए उसके तत्त्वों का परिचय दीजिए। **10**  
अथवा  
प्रेमचंदयुगीन कहानी साहित्य की विशेषताओं को रेखांकित कीजिए।
- ब) निम्नलिखित में से किन्हीं दो के उत्तर लिखिए। **10**  
1) कहानी साहित्य का स्वरूप।  
2) दलित उपन्यास साहित्य।  
3) कहानी का उद्देश्य।
2. अ) “सेवासदन” उपन्यास के कथावस्तु की समीक्षा कीजिए। **10**  
अथवा  
“कगार की आग” उपन्यास में चित्रित नारी समस्याओं का विवेचन कीजिए।
- ब) निम्नलिखित में से किन्हीं दो के उत्तर लिखिए। **10**  
1) “सेवासदन” के पुरुष पात्र।  
2) “सेवासदन” का कथ्य।  
3) “कगार की आग” का उद्देश्य।
3. अ) “लौटते हुए मुसाफिर” उपन्यास में चित्रित समस्याएँ। **10**  
अथवा  
“कगार की आग” उपन्यास का तात्त्विक विवेचन कीजिए।

P.T.O.



- ब) निम्नलिखित में से किन्हीं दो के उत्तर लिखिए। 10
- 1) “लौटते हुए मुसाफिर” के चिकनों की बस्ती।
  - 2) “लौटते हुए मुसाफिर” का सांस्कृतिक पक्ष।
  - 3) “कगार की आग” की शीर्षक सार्थकता।
4. अ) “टूटते वहम” कहानी संग्रह में चित्रित दलित जीवन की विशेषताएँ स्पष्ट कीजिए। 10
- अथवा**
- विवेकी राय की मेरी तेरह कहानियों के आधार पर स्त्री जीवन की व्यथा का अंकन कीजिए।
- ब) निम्नलिखित में से किन्हीं दो के उत्तर लिखिए। 10
- 1) “सिलिया” में चित्रित दलित स्त्री का संघर्ष।
  - 2) “नई राह की खोज” कथावस्तु की विशेषताएँ।
  - 3) धूप से भी बडा की संवाद योजना।
5. अ) ललमनियाँ तथा अन्य कहानियों में प्रतिबिंबित आर्थिक पक्ष का विवेचन कीजिए। 10
- अथवा**
- सुशीला टाकभौरे की कहानियों की विशेषताएँ स्पष्ट कीजिए।
- ब) निम्नलिखित में से किन्हीं दो के उत्तर लिखिए। 10
- 1) “बिछूडे हुए” कहानी के पात्र।
  - 2) “बेटी” कहानी का कथ्य।
  - 3) “मुझे जबाब देना है” कहानी का देशकाल वातावरण।
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**Ph.D. Course Work Examination, 2016**  
**KANNADA**  
**Paper – II : Recent Trends in Kannada Literature**

Day and Date : Wednesday, 10-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. a) ಕನ್ನಡ ನವೋದಯ ಸಾಹಿತ್ಯದ ಪ್ರಮುಖ ಲಕ್ಷಣಗಳನ್ನು ವಿವರಿಸಿ. 10  
b) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. (5+5=10)  
1) ಇಂಗ್ಲಿಷ್ ಗೀತೆಗಳು      2) ಭಾವಗೀತೆ      3) ಬೇಂದ್ರೆ
2. a) ಸ್ತ್ರೀವಾದ ಎಂದರೇನು ? ಸ್ತ್ರೀವಾದಿ ವಿಮರ್ಶೆಯ ಆಶಯವನ್ನು ವಿವರಿಸಿ. 10  
b) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. (5+5=10)  
1) ನವ್ಯ ವಿಮರ್ಶೆ  
2) ಪರಂಪರೆ ಮತ್ತು ವ್ಯಕ್ತಿ ಪ್ರತಿಭೆ  
3) ವಿಮರ್ಶೆಯ ಪರಿಭಾಷೆ
3. a) ಪ್ರಗತಿಶೀಲ ಸಾಹಿತ್ಯದ ಧೋರಣೆಗಳನ್ನು ಚರ್ಚಿಸಿ. 10  
b) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. (5+5=10)  
1) ಬಸವರಾಜ ಕಟ್ಟಿಮನಿ      2) ನಿರಂಜನ      3) ಮಸಣದ ಹೂವು
4. a) ದಲಿತ ಸಾಹಿತ್ಯದ ಪ್ರೇರಣೆಗಳನ್ನು ವಿವರಿಸಿ. 10  
b) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. (5+5=10)  
1) ದೇವನೂರು ಮಹಾದೇವ      2) ಊರುಕೇರಿ      3) ಬಂಡಾಯ ಸಾಹಿತ್ಯ
5. a) ಕವಿ ಅಥವಾ ಕೃತಿ ಕೇಂದ್ರಿತ ಸಂಶೋಧನೆಯ ಸ್ವರೂಪ ಹಾಗೂ ಮಿತಿಗಳನ್ನು ವಿವರಿಸಿ. 10  
b) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. (5+5=10)  
1) ಆಕರ ಸಾಮಗ್ರಿ      2) ಸಮಸ್ಯೀಕರಣ      3) ಪ್ರಾಚ್ಯಶೋಧ





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**Ph.D. Course Work Examination, 2016**  
**KANNADA**  
**Paper – III : Modern Topics in Kannada**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) ಕನ್ನಡ ನಾಟಕ ಸಾಹಿತ್ಯದ ಹುಟ್ಟು - ಬೆಳವಣಿಗೆ ಕುರಿತು ಬರೆಯಿರಿ. 10
- B) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. 10
- 1) ಚಂದ್ರಕಾಂತ ಕುಸನೂರು
- 2) ಆಧುನಿಕ ಕನ್ನಡ ಸಾಮಾಜಿಕ ನಾಟಕಗಳು
- 3) ಬೆರಳ್ಳೆ - ಕೊರಳ್ಳೆ.
2. A) ಆಧುನಿಕ ಕನ್ನಡ ಕಾವ್ಯದ ಪ್ರಕಾರಗಳನ್ನು ಕುರಿತು ನಿರೂಪಿಸಿರಿ. 10
- B) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. 10
- 1) ಬಂಡಾಯ ಕಾವ್ಯ
- 2) ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
- 3) ಆಧುನಿಕ ಕನ್ನಡ ಕಾವ್ಯದಲ್ಲಿ ರಾಷ್ಟ್ರೀಯತೆ.
3. A) ಕುವೆಂಪು - ಬೇಂದ್ರೆಯವರ ಕಾವ್ಯಕ್ಷೇತ್ರದಲ್ಲಿ ನಡೆದ ಸಂಶೋಧನೆಯನ್ನು ಕುರಿತು ಬರೆಯಿರಿ. 10
- B) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. 10
- 1) ಆಧುನಿಕ ಕನ್ನಡ ಕಾವ್ಯದ ಪ್ರೇರಣೆ - ಧೋರಣೆ
- 2) ನವೋದಯ ಪೂರ್ವದ ಕಾವ್ಯ
- 3) ಆಧುನಿಕ ಕಾವ್ಯದ ಮೇಲೆ ಇಂಗ್ಲೀಷ್ ಕಾವ್ಯದ ಪ್ರಭಾವ.

P.T.O.



4. A) ಪಿ. ಲಂಕೇಶ್ ಅವರ 'ಸಂಕ್ರಾಂತಿ' ನಾಟಕ ಕುರಿತು ಪ್ರಬಂಧ ಬರೆಯಿರಿ. **10**
- B) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. **10**
- 1) 'ಸಂಕ್ರಾಂತಿ' ನಾಟಕದ ನಾರಣಪ್ಪ
  - 2) ಪಿ. ಲಂಕೇಶ್ ಮತ್ತು ಕನ್ನಡ ರಂಗಭೂಮಿ
  - 3) ಕನ್ನಡ ನಾಟಕ ಸಾಹಿತ್ಯಕ್ಕೆ ಟಿ. ಪಿ. ಕೈಲಾಸಂ ಮತ್ತು ಶ್ರೀರಂಗರ ಕೊಡುಗೆ.
5. A) ಕವಿತೆ ವಾರ್ಷಿಕ - 2008 ಪಠ್ಯದ ಕಾವ್ಯದಲ್ಲಿ ಮೂಡಿಬಂದ ನಾಡು-ನುಡಿ ಅಭಿಮಾನ ಕುರಿತು ಬರೆಯಿರಿ. **10**
- B) ಎರಡಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. **10**
- 1) ಕವಿತೆ ವಾರ್ಷಿಕ - 2008 ರಲ್ಲಿ ಸಾಮಾಜಿಕತೆ
  - 2) ಕವಿತೆ ವಾರ್ಷಿಕ - 2008 ರ ವೈಶಿಷ್ಟ್ಯ
  - 3) ಕೆ. ಎಸ್. ನಿಸಾರ್ ಅಹ್ಮದ್.
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**Ph.D. Course Work Examination, 2016  
KANNADA**

**Paper – IV : Advanced Development in Kannada Language**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. ಅ) ಕನ್ನಡ ಭಾಷೆಯ ಇತಿಹಾಸವನ್ನು ಕುರಿತು ಬರೆಯಿರಿ. 10

**ಅಥವಾ**

ಪ್ರಾಚೀನ ಕನ್ನಡ, ಹಳಗನ್ನಡ ಮತ್ತು ಹೊಸಗನ್ನಡ ಇವುಗಳನ್ನು ಉದಾಹರಣೆಯೊಂದಿಗೆ ವಿವರಿಸಿರಿ.

- ಆ) ಬೇಕಾದ 2ಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ : 10

- 1) ಉಪಭಾಷೆ
- 2) ಸಾಮಾಜಿಕ ಭಾಷೆ
- 3) ಭೌಗೋಳಿಕ ಭಾಷೆ.

2. ಅ) ಕನ್ನಡ ಉಪಭಾಷೆಗಳ ವೈಶಿಷ್ಟ್ಯಗಳಾವುವು ? ಉದಾಹರಣೆಯೊಂದಿಗೆ ವಿವರಿಸಿರಿ. 10

**ಅಥವಾ**

ಧಾರವಾಡ ಕನ್ನಡ, ಕಲಬುರ್ಗಿ ಕನ್ನಡ, ಮೈಸೂರು ಕನ್ನಡ ಮತ್ತು ಕರಾವಳಿ ಕನ್ನಡ ಇವುಗಳನ್ನು ಕುರಿತು ಬರೆಯಿರಿ.

- ಆ) ಬೇಕಾದ 2ಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ : 10

- 1) ಕನ್ನಡ ಭಾಷೆಯ ಮೇಲೆ ಸಂಸ್ಕೃತದ ಪ್ರಭಾವ
- 2) ಅನ್ಯ ಭಾಷೆಗಳಿಂದ ಸ್ವೀಕೃತ ಪದಗಳು
- 3) ಕನ್ನಡದಲ್ಲಿ ಲಿಂಗ ವ್ಯವಸ್ಥೆ.

3. ಅ) ದಕ್ಷಿಣ ದ್ರಾವಿಡ, ಮಧ್ಯ ದ್ರಾವಿಡ ಮತ್ತು ಉತ್ತರ ದ್ರಾವಿಡ ಭಾಷೆಗಳನ್ನು ಕುರಿತು ಬರೆಯಿರಿ. 10

**ಅಥವಾ**

ಪಂಚ ದ್ರಾವಿಡ ಭಾಷೆಗಳಾವುವು ? ವಿವರಿಸಿರಿ.

P.T.O.



ಆ) ಬೇಕಾದ 2ಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ :

10

- 1) ಧ್ವನಿ-ಧ್ವನಿಮಾ
- 2) ಆಕೃತಿಮಾ
- 3) ವಾಕ್ಯ.

4. ಅ) ಜಾನಪದ ಎಂದರೇನು ? ವ್ಯಾಖ್ಯಾನಿಸಿರಿ.

10

**ಅಥವಾ**

ಜಾನಪದ ಸಾಹಿತ್ಯದ ಸ್ವರೂಪ ವ್ಯಾಪ್ತಿಯನ್ನು ಕುರಿತು ಬರೆಯಿರಿ.

ಆ) ಬೇಕಾದ 2ಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ :

10

- 1) ಜನಪದ ಸಂಪ್ರದಾಯಗಳು
- 2) ಜನಪದ ಕಥೆಗಳು
- 3) ಜನಪದ ನಂಬಿಕೆಗಳು.

5. ಅ) ಜಾನಪದ ಸಾಹಿತ್ಯದ ರೂಪಗಳನ್ನು ಕುರಿತು ಬರೆಯಿರಿ.

10

**ಅಥವಾ**

ಕನ್ನಡ ಜನಪದ ಸಾಹಿತ್ಯದಲ್ಲಿ ನಡೆದಿರುವ ಸಂಶೋಧನೆಗಳನ್ನು ಕುರಿತು ಬರೆಯಿರಿ.

ಆ) ಬೇಕಾದ 2ಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ :

10

- 1) ಜನಪದ ದೈವಗಳು
- 2) ಜಾನಪದ ಕ್ಷೇತ್ರಕಾರ್ಯ
- 3) ಜನಪದ ಕಲೆಗಳು.

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Ph.D. Course Work Examination, 2016  
URDU (Paper – II) (New)  
Recent Trends in Urdu  
Urdu Ke Asari Rujhanat

Day and Date : Wednesday, 10-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

ہدایات : (۱) تمام سوالات لازمی ہیں۔

(۲) تمام سوالات کے نشانات محاذی درج ہیں۔

(1×10=10)

۱. الف) علی گڑھ تحریک نے اردو ادب پر کیا اثرات مرتب کئے؟

(2×5=10)

ب) نئی دو پر اختصاریہ تحریر کیجئے :

(۱) سائنٹفک سوسائٹی

(۲) سر سید کی اہم تصانیف

(۳) حالی کی سوانح نگاری۔

(1×10=10)

۲. الف) رومانی تحریک کے آغاز و ارتقاء سے بحث کیجئے۔

(2×5=10)

ب) نئی دو پر اختصاریہ تحریر کیجئے :

(۱) شاعر شباب جوش ملیح آبادی

(۲) اختر شیرانی کی نظم نگاری

(۳) سجاد حیدر کی افسانہ نگاری۔

P.T.O.



(1×10=10)

۳. الف) حلقہ اربابِ ذوق کی نظم نگاری پر اظہار خیال کیجئے۔

(2×5=10)

ب) ٹی دو پر اختصاریہ لکھئے :

۱) جدید غزل

۲) جدید نظم

۳) ن۔ م۔ راشد۔

(1×10=10)

۴. الف) اردو میں ترقی پسند تحریک کے آغاز و ارتقاء کا جائزہ لیجئے۔

(2×5=10)

ب) ٹی دو پر اختصاریہ لکھئے :

۱) ترقی پسند تنقید

۲) ترقی پسند افسانہ

۳) ترقی پسند ناول۔

(1×10=10)

۵. الف) جدیدیت کی تحریک کے اردو ادب پر کیا اثرات مرتب ہوئے ؟ تحریر کیجئے۔

(2×5=10)

ب) ٹی دو پر اختصاریہ لکھئے :

۱) تجریدی افسانہ

۲) علاقائی افسانہ

۳) جدید نظم۔

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Ph.D. Course Work Examination, 2016

URDU (Paper – III) (New)

C) Taraqi Pasand Urdu Shoara

Day and Date : Thursday, 11-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

ہدایات : (۱) تمام سوالات لازمی ہیں۔

(۲) تمام سوالات کے نشانات محاذی درج ہیں۔

10 الف) فیض احمد فیض کی غزل گوئی کے بارے میں آپ کیا جانتے ہیں؟ اظہار خیال کیجئے۔

10 ب) ذیل میں سے کسی دو پر مختصر نوٹ لکھئے :

(۱) فیض کی نظم "صبح آزادی" کا خلاصہ اپنے الفاظ میں لکھئے۔

(۲) فیض کی شاعری کی خصوصیات بیان کیجئے۔

(۳) فیض بحیثیت رومانی شاعر پر اظہار خیال کیجئے۔

10 الف) مخدوم محی الدین کی انقلابی نظموں کا تفصیلی جائزہ پیش کیجئے۔

10 ب) ذیل میں سے کسی دو پر مختصر نوٹ لکھئے :

(۱) مخدوم محی الدین "بحیثیت رومانی شاعر" مختصر نوٹ لکھئے۔

(۲) مخدوم کی مشہور نظم "چاند تاروں کا بن" کا احاطہ کیجئے۔

(۳) مخدوم محی الدین کی غزل گوئی کا جائزہ لیجئے۔

P.T.O.



۳. الف) جوش ملیح آبادی کو شاعر انقلاب کہا جاتا ہے اس قول سے آپ کہاں تک اتفاق کرتے ہیں۔  
وضاحت کیجئے۔  
10
- ب) ذیل میں سے کسی دو پر مختصر نوٹ لکھئے :  
10
- (۱) جوش کے حالات زندگی پر نوٹ لکھئے۔  
(۲) جوش کی نظم " الیسی صبح " کا خلاصہ بیان کیجئے۔  
(۳) جوش کی طنزیہ نظموں کی نشاندہی کیجئے۔
۴. الف) ساعر لدھیانوی کی شاعری کی خصوصیات بیان کیجئے۔  
10
- ب) ذیل میں سے کسی دو پر مختصر نوٹ لکھئے :  
10
- (۱) ساعر لدھیانوی کی نظم " گریز " کا فنی تجزیہ پیش کیجئے۔  
(۲) ساعر کی غزلوں کا جائزہ لیجئے۔  
(۳) ساعر لدھیانوی کے حالات زندگی کا جائزہ لیجئے۔
۵. الف) ترقی پسند تحریک کے پس منظر میں جاں نثار اختر کی شاعری کا جائزہ لیجئے۔  
10
- ب) ذیل میں سے کسی دو پر مختصر نوٹ لکھئے :  
10
- (۱) جاں نثار اختر کی نظم " گرلز کالج کی لاری " پر تبصرہ کیجئے۔  
(۲) جاں نثار اختر کے حالات زندگی پر نوٹ لکھئے۔  
(۳) جاں نثار اختر کی نظمیں اشتراکیت کی نقیب ہیں۔ اس پر تبصرہ کیجئے۔





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**Ph.D. Course Work Examination, 2016**  
**PHYSICS**  
**Paper – II : Recent Trends in Physics**

Day and Date : Wednesday, 10-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Explain the powder diffraction method and give basic concept of derive calculation of intensity of XRD and texture analysis. **10**
- B) Write a short note on **any two** : **10**
- i)  $\theta$ -2 $\theta$  Spectrometers.
  - ii) Use of JCPDs data cards.
  - iii) Basic crystal systems.
2. A) Construction and working of TEM. **10**
- B) Write a short note on **any two** : **10**
- i) Advantages of FESEM
  - ii) Concept of EDS and WDS
  - iii) Principle of Image formation.
3. A) IR applications for  $\text{NiFe}_2\text{O}_4$  and  $\text{BaTiO}_3$ . **10**
- B) Write a short note on **any two** : **10**
- i) IR Sensitive modes of vibration.
  - ii) Types of transitions in UV-Vis spectrum.
  - iii) Typical UV spectra for organic molecules.

P.T.O.



4. A) Determination of optical bandgap using absorption spectroscopy. **10**
- B) Write a short note on **any two** : **10**
- i) IR insensitive modes of vibration.
  - ii) Advantages of FTIR instrumentation.
  - iii) Effect of conjugation.
5. A) Surface force and adhesion measurements using AFM microscopy. **10**
- B) Write a short note on **any two** : **10**
- i) Magnetic force microscope.
  - ii) AFM based nano-lithography.
  - iii) Valence-band analysis using XPS.
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**Ph.D. Course Work Examination, 2016  
PHYSICS (Old)  
Paper – III : Modern Topics in Physics**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) Distinguish between ferroelectric and ferromagnetic materials. Write a note on ferroics. 10
- B) Write a short note on **any two** : 10
  - i) Applications of fuel cells
  - ii) Rare earth magnites
  - iii) Types of solar cells.
2. A) Write a note on ultrathin absorber solar cells. 10
- B) Write a short note on **any two** : 10
  - i) Different patterning processes
  - ii) RuO<sub>2</sub> based supercapacitors
  - iii) Polyaniline based supercapacitors.
3. A) Explain fuel cell characteristics. 10
- B) Write a short note on **any two** : 10
  - i) FET devices for gas and ion sensing
  - ii) Charge ordering
  - iii) Applications of supercapacitors.



4. A) Write a note on recent status of carbon. **10**
- B) Write a short note on **any two** : **10**
- i) Lithography
  - ii) Spintronics
  - iii) Proton exchange membranes.
5. A) Discuss paramagnetic and ferromagnetic DMS. **10**
- B) Write a short note on **any two** : **10**
- i) Silicon solar cells
  - ii) Working of dye sensitized solar cells
  - iii) Hybrid supercapacitors.
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Ph.D. Course Work Examination, 2016  
PHYSICS

Paper – III (New) and Paper – IV (Old) : Advanced Development in Physics  
(E1) A) : Solar Cells and Super Capacitor

Day and Date : Friday, 12-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) What is solar cell ? Explain short circuit current ( $I_{SC}$ ) and open circuit voltage ( $V_{OC}$ ) using I-V characteristics curve. 10  
B) Write a short note on **any two** : 10
  - i) Photovoltaic effect
  - ii) Heterojunction solar cells
  - iii) Internal photon conversion efficiency.
  
2. A) Write basic concept and working and materials of metal-semiconductor solar cells. 10  
B) Write a short note on **any two** : 10
  - i) CdS/Cu<sub>2</sub>S solar cells
  - ii) Dye sensitised solar cells
  - iii) Ultra thin absorber solar cells.
  
3. A) Mechanisms and Chemical Vapor Deposition (CVD) and give its applications. 10  
B) Write a short note on **any two** : 10
  - i) Recent developments in solar cells
  - ii) Applications of solar cells
  - iii) Single junction solar cells.



4. A) Explain working of super capacitors and batteries and difference between them. **10**
- B) Write a short note on **any two** : **10**
- i) Advantages of electrochemical double layer
  - ii) Regaon Plots inside super capacitor
  - iii) Hybrid supercapacitors.
5. A) Explain different types of super capacitors. **10**
- B) Write a short note on **any two** : **10**
- i) Fabrication of super capacitors
  - ii) Applications of super capacitors
  - iii) Carbon material based super capacitors.
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**Ph.D. Course Work Examination, 2016**  
**PHYSICS**  
**Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in Physics**  
**E2 : B Ferroelectric and Ferrimagnetic Materials**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) What is electric polarization ? Explain electric polarization in time varying fields. 10
- B) Write a short note on **any two**. 10
  - i) Electromechanical effects.
  - ii) Nonferroelectric materials.
  - iii) Effect of dc conductivity.
2. A) Explain phenomenological properties and mechanisms of PbO, ZrO<sub>2</sub>, and TiO<sub>2</sub> (PZT alloys). 10
- B) Write a short note on **any two**. 10
  - i) Debye Equation.
  - ii) Ferroelectric transition.
  - iii) Thermodynamic theory.
3. A) How to auto-stabilized nonlinear dielectric elements in case of high-energy electrical pulse generators ? 10
- B) Write a short note on **any two**. 10
  - i) Piezoelectric effects.
  - ii) Piezoelectric materials.
  - iii) Application of piezoelectrics.

P.T.O.



4. A) Explain the molecular field theory below critical temperature ( $T_c$ ). **10**
- B) Write a short note on **any two**. **10**
- i) Demagnetizing fields.
  - ii) Magnetic measurements in closed circuits.
  - iii) Vibrating-sample magnetometer.
5. A) Define magnetic anisotropy. Explain magnetic anisotropy in cubic crystals and in hexagonal crystals. **10**
- B) Write a short note on **any two**. **10**
- i) Anisotropy measurement.
  - ii) Fitted magnetization curve.
  - iii) Torque curves.
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**Ph.D. Course Work Examination, 2016**  
**PHYSICS**  
**Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in Physics**  
**E3 C) : Solid State Gas Sensor Devices**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) What is the chemical vapour deposition ? Explain its working and basic components. 10  
B) Write a short note on **any two** : 10
  - i) Gas sensing mechanism
  - ii) Vacuum evaporation method
  - iii) Role of fuels in the combustion synthesis method.
2. A) Construction and working of catalytic combustion gas sensors. Give its sensor operation factors. 10  
B) Write a short note on **any two** : 10
  - i) Thick film and processed pellet sensors
  - ii) Advantages of spray pyrolysis technique
  - iii) Applications of gas sensor.
3. A) Explain the vacuum evaporation thin film deposition method. 10  
B) Write a short note on **any two** : 10
  - i) Mechanism of spillover
  - ii) Catalysis mechanism
  - iii) Oxidation and dissociation of oxides.

P.T.O.



4. A) Explain principle and working of electrochemical gas sensors. Give its applications. **10**
- B) Write a short note on **any two** : **10**
- i) Current use of commercial solid state gas sensor
  - ii) Effective masses
  - iii) Advantages of solid electrolyte gas sensors.
5. A) Explain the working principle of semiconductor gas sensor and its application. **10**
- B) Write a short note on **any two** : **10**
- i) Chemical vapour deposition
  - ii) Gibbs's adsorption isotherm
  - iii) Advantages of thick film sensors.
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**Ph.D. Course Work (New) Examination, 2016**  
**ELECTRONICS (Paper – II)**  
**Recent Advances in Electronics**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

1. A) Discuss the ARM Bus Architecture in detail. Also write a note on AMBA Bus Protocol. 10  
B) Answer **any two** :
  - i) Write the applications of ARM processor. 5
  - ii) Explain the Stack operations using STM and LDM. 5
  - iii) Write active registers available in user mode of ARM processor. 5
2. A) Mention the ten salient features of LPC2148 microcontroller. 10  
B) Answer **any two** :
  - i) Discuss about the on chip peripherals of LPC2148. 5
  - ii) Discuss the functional features of timers available in LPC2148. 5
  - iii) How many I<sup>2</sup>c controllers are available on LPC2148 ? Discuss its features and connections. 5
3. A) Discuss about sensors Network management in detail. 10  
B) Answer **any two** :
  - i) What is meant by ISM band ? Where it is used ? 5
  - ii) Write a note on RF modules. 5
  - iii) Describe the designing of WSN by using Zigbee modules. 5



4. A) What do you understand by MOS switch ? Mention the important characteristics of MOS switch. 10
- B) Answer **any two** :
- i) Draw a current sink and current source circuits neatly. 5
  - ii) Narrate about current reference and its uses. 5
  - iii) Write circuit diagram of CMOS OPAMP. 5
5. A) Describe the SOC design methodology in detail. 10
- B) Answer **any two** :
- i) What is meant by performance analysis of analog function blocks ? Explain. 5
  - ii) Describe about analog PSOC block. 5
  - iii) Write the block diagram of Actel ProASIC3. 5
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**Ph.D. Course Work Examination, 2016  
ELECTRONICS (Paper – III) (Old)  
Modern Topics in Electronics**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Write a note on ARM 7 and ARM 9 families. 10  
B) Answer **any two** of the following : 10
  - 1) Define the instruction set of ARM processor.
  - 2) What is the role of Current Program Status Register (PSW), register 13, register 14 and register 15 ?
  - 3) Explain the states of ARM processor.
  
2. A) Describe AMBA bus protocol in detail. 10  
B) Answer **any two** of the following : 10
  - 1) Draw the block diagram of LPC 2378 microcontroller.
  - 2) Explain pipelining in context with ARM7 with a suitable example.
  - 3) Which are the four major design rules in RISC philosophy ?
  
3. A) Write on evolution of programmable logic devices. 10  
B) Answer **any two** of the following : 10
  - 1) Mention the main characteristics of a Wireless Sensor Network. Also name some predominant standards commonly used in WSN communications.
  - 2) Mention the characteristics of ZigBee Module. Also mention the ZigBee device types.
  - 3) Give details of software ZigBee architecture. Also list some application areas of ZigBee.



4. A) Describe Spatial Dimensionality. **10**
- B) Answer **any two** of the following : **10**
- 1) Develop VHDL code for 8 bit gray counter.
  - 2) Write Verilog code for the 8-bit adder with carry in and carry out; and draw an entity diagram.
  - 3) Differences between Verilog and VHDL.
5. A) What is SoC ? Mention the Levels of Modelling Abstraction. **10**
- B) Answer **any two** of the following : **10**
- 1) Explain the salient features of Xilinx XC 7000 CPLDs.
  - 2) Mention the significant characteristics of FPGAs along with their advantages and disadvantages.
  - 3) Mention the steps involved in VLSI design flow.
-



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**Ph.D. Course Work Examination, 2016**  
**ELECTRONICS**  
**Paper – III (New) and Paper – IV (Old)**  
**Elective – I A) : Architecture of Wireless Sensor Networks**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Mention various performance matrices of WSN ? Compare in brief wired and wireless sensor networks with suitable example. 10  
B) Answer **any two** :
  - i) List and explain in brief various modes of operation of a sensor node. 5
  - ii) Explain with relevant sketch the functions of different modules of a sensor node. 5
  - iii) Discuss on any 3 applications of WSN in brief. 5
  
2. A) Explain AVR microcontroller based WSN system with optimum number of sensors for monitoring and control of small Green house with suitable block diagram, flow charts. 10  
B) Answer **any two** :
  - i) Differentiate proactive and reactive routing. Which routing is more suitable for WSN ? 5
  - ii) List and explain in short the classifications of the services of wireless security system. 5
  - iii) List and explain in brief the type of architecture used in IEEE 802.11. 5
  
3. A) List out difference between Zigbee and Bluetooth technologies with suitable examples. 10  
B) Answer **any two** :
  - i) What is meant by hard and soft handoff ? Explain in short. 5
  - ii) Explain the two types of protocols used to handle multiple access issues. 5
  - iii) Write short note on TinyOS. 5



- 4. A) Explain any three scheduled based MAC protocols of WSN. 10
  - B) Answer **any two** :
    - i) What are the various energy consumption operations in WSN ? 5
    - ii) What are multi path propagation mechanisms considered in WSN deployments ? List the various services offered by localization. 5
    - iii) Discuss on any two method for duplicate address detection. 5
  - 5. A) Discuss on any 3 current applications of WSN in Agriculture. 10
  - B) Answer **any two** :
    - i) Differentiate ad hoc network and WSN with suitable example. 5
    - ii) Discuss on the pros and cons of augmented general purpose motes. 5
    - iii) List the parameters that influence the handoff. 5
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**Ph.D. Course Work Examination, 2016**  
**ZOOLOGY**  
**Paper – II : Recent Trends in Zoology**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Describe arthropod vectors of humans with suitable examples. 10  
B) Write short notes on **(any two)** : 10
    - i) Pathogenic protozoan *Trichomonas*
    - ii) Pathogenic helminth *Wuchereria*
    - iii) Vector-host-pathogen interaction of Mites.
  2. A) Define enzymes, add note on its classification with suitable example of each. 10  
B) Write short notes on **(any two)** : 10
    - i) Classification of carbohydrates
    - ii) Electrophoresis
    - iii) Chromatography
  3. A) Describe tissue culture. 10  
B) Write short notes on **(any two)** : 10
    - i) Principles of radioimmunoassay
    - ii) Salient features of nucleic acids
    - iii) Immune reactions.
  4. A) Illustrate Ozone depletion. 10  
B) Write short notes on **(any two)** : 10
    - i) Bioremediation of contaminated soil
    - ii) Acid rain
    - iii) Diversity indices
  5. A) Comment on wildlife biology. 10  
B) Write short notes on **(any two)** : 10
    - i) Morphological trends in taxonomy
    - ii) Biological nomenclature
    - iii) Importance of biodiversity.
-



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**Ph.D. Course Work Examination, 2016**  
**ZOOLOGY**  
**Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in Zoology**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Explain the cerebral cortex and its evolutionary significance. **10**  
B) Write short notes on (**any two**) : **10**  
i) Biosynthesis of catecholamines.  
ii) Reflex regulation in medulla.  
iii) Structure of parathyroid gland.
2. A) Explain the fresh water fish culture in ponds. **10**  
B) Write short notes on (**any two**) : **10**  
i) Bundh breeding.  
ii) Tilapia culture.  
iii) Chinese hatchery.
3. A) Describe the structure of different types of ribozymes. **10**  
B) Write short notes on (**any two**) : **10**  
i) Enzyme specificity.  
ii) Types of fermentation.  
iii) Applications of biosensors.

P.T.O.



4. A) Discuss the Darwin's theory of evolution. **10**
- B) Write short notes on (**any two**) : **10**
- i) Origin of organic molecules.
  - ii) Fossil record and genetic analysis.
  - iii) Natural Speciation.
5. A) Explain the regulatory genes control in the development of Drosophila body plan. **10**
- B) Write short notes on (**any two**) : **10**
- i) Transgenesis.
  - ii) Embryonic stem cells.
  - iii) Epigenetic control of cellular differentiation.
-



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**Ph.D. Course Work Examination, 2016**  
**GEOGRAPHY**  
**Paper – II : Recent Trends in Geography**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) Elaborate contribution of Greek geographer in the development of geography. **10**  
B) Short answer type (**any two**) : **10**
  - 1) Ptolemy
  - 2) Human development index
  - 3) Characteristics of model.
  
2. A) Write an essay on significance and importance of approaches in geography. **10**  
B) Short answer type (**any two**) : **10**
  - 1) Period of turmoil in Europe
  - 2) Miss Ellen Churchill Semple
  - 3) Measurement and scaling.
  
3. A) Discuss laws and theories in geography. **10**  
B) Short answer type (**any two**) : **10**
  - 1) Nomothetic approach
  - 2) Concept of area
  - 3) Stages of regionalization.

P.T.O.



4. A) Explain the application of geography in planning and development of health care. **10**
- B) Short answer type (**any two**) : **10**
- 1) Geography as a scientific discipline.
  - 2) Concept of space
  - 3) Indian Geographical concepts.
5. A) Discuss human resource development in India. **10**
- B) Short answer type (**any two**) : **10**
- 1) Behavioral approach
  - 2) Population policy during 9<sup>th</sup> Plan.
  - 3) Characteristics of region.
-



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**Ph.D. Course Work Examination, 2016**  
**GEOGRAPHY (Old)**  
**Paper – III : Modern Topics in Geography**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) What is the role of quantitative revolution in geographical research ? **10**  
B) Write short answers (**any two**) : **10**  
i) What is the general impact of climate change observed on agriculture ?  
ii) Describe briefly the nature of radical geography.  
iii) What causes salinity of soil ?
2. A) Describe the impact of modern agriculture on natural environment. **10**  
B) Write short answers (**any two**) : **10**  
i) Define volcanism and categorize volcanoes.  
ii) What are the common causes of flash floods ?  
iii) What is the need of waste material disposal ?
3. A) Describe the role of modern techniques in geographical research. **10**  
B) Write short answers (**any two**) : **10**  
i) What is locational analysis ?  
ii) Define thermal remote sensing.  
iii) Define GIS.

P.T.O.



4. A) Describe the significance of computer application in study of geography. **10**
- B) Write short answers (**any two**) : **10**
- i) What is data structure ?
  - ii) What is aerial photograph ?
  - iii) What is raster data ?
5. A) 'GIS' is an effective tool of spatial analysis elaborate. **10**
- B) Write short answers (**any two**) : **10**
- i) What are the common causes of monsoon delay in Maharashtra ?
  - ii) What are the primary steps of mitigation of droughts in rural region ?
  - iii) What are the bases of sustainable agriculture practice ?
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**Ph.D. Course Work Examination, 2016  
GEOGRAPHY (Paper No. – III) (New)  
D) Recent Trends in Tourism Geography**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

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

1. A) What is tourism geography ? Explain the significance of tourism geography. **10**  
B) Write short notes (**any two**) : **10**
  - 1) Concept of Rural tourism.
  - 2) Nature of tourism geography.
  - 3) Role of tourism in changing economy of India.
2. A) Discuss the economic and social impact of tourism. **10**  
B) Write short notes (**any two**) : **10**
  - 1) Development of tourism in India.
  - 2) Types of tourism.
  - 3) Buddhist religious tourist centre in India.
3. A) State the types of tourism planning and discuss any one of them. **10**  
B) Write short notes (**any two**) : **10**
  - 1) Tourism marketing.
  - 2) Tourist demand and tourism product.
  - 3) Significance of tourism marketing.
4. A) Explain the tourism promotional plans of state government of Maharashtra. **10**  
B) Write short notes (**any two**) : **10**
  - 1) Role of transport system for growth of tourism.
  - 2) Mix tourism marketing.
  - 3) Tourism promotion.
5. A) Explain the research design for tourism geography. **10**  
B) Write short notes (**any two**) : **10**
  - 1) MTDC
  - 2) Marketing strategy for tourism.
  - 3) Tourist organizations in the World.





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**Ph.D. Course Work Examination, 2016  
GEOGRAPHY  
Paper – III (New) and Paper – IV (Old)  
Recent Trends in Economic Geography**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

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

1. A) Describe the approaches to the study of economic geography. **10**  
B) Write short answers on **any two** of the following : **10**  
i) Discuss on the primary economic activities.  
ii) State the importance of economic geography.  
iii) Describe the characteristics of secondary economic activities.
2. A) Critically examine the Christaller's Central Place Theory. **10**  
B) Write short answers on **any two** of the following : **10**  
i) Explain the Raily's Gravitational model.  
ii) State the Alfred Weber's industrial location theory.  
iii) Describe the resource utilization and its impact on environmental degradation.
3. A) Explain the Von Thunen's theory of land utilization. **10**  
B) Write short answers on **any two** of the following : **10**  
i) Explain the concept of resource.  
ii) State the different approaches to promote economic development.  
iii) Describe the concept of sustainable development.



4. A) Describe the classification of resources. **10**
- B) Write short answers on **any two** of the following : **10**
- i) State the multinuclear theory.
  - ii) Describe the importance of E-mail shopping.
  - iii) State the methods of measurement of economic development.
5. A) Explain the non-physical determinants of agriculture. **10**
- B) Write short answers on **any two** of the following : **10**
- i) Explain the methods of agricultural regionalization.
  - ii) Describe the types of agricultural regions.
  - iii) State the concept of sky shopping.
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**Ph.D. Course Work Examination, 2016**  
**GEOGRAPHY**  
**Paper III (New) and Paper IV (Old)**  
**B) Recent Trends in Population Geography**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) Explain the significance of the Population Geography. 10  
B) Write short answer on **any two** of the following : 10
  - i) Crude Death Rate
  - ii) Age and Sex Specific Mortality Rate
  - iii) Population density.
  
2. A) Explain the infant mortality rates with suitable examples. 10  
B) Write short answer on **any two** of the following : 10
  - i) Sex Ratio
  - ii) Types of mortality
  - iii) Maternal mortality rate.
  
3. A) Explain the techniques of analysis in the study of Population Geography. 10  
B) Write short answer on **any two** of the following : 10
  - i) Optimum Population
  - ii) Population pyramids
  - iii) Economic Composition.



4. A) Explain the Malthus theory of population growth. **10**
- B) Write short answer on **any two** of the following. **10**
- i) Migration of India
  - ii) Pre transition stage of demographic theory
  - iii) Death Rate.
5. A) Explain the Population policy of India. **10**
- B) Write short answer on **any two** of the following. **10**
- i) Global population trends
  - ii) Urbanization of India
  - iii) India's economic composition.
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**Ph.D. Course Work (Computer Science) Examination, 2016**  
**Paper – III (New) and Paper – IV (Old)**  
**ADVANCED DEVELOPMENT IN COMPUTER SCIENCE**  
**(Elective – I) : A) Digital Image Processing**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. a) What is histogram equalization ? Compare it with contrast stretching.  
b) Explain the basic steps for filtering the image in the frequency domain, with neat block diagram. **(10+10)**
2. a) Draw the block diagram of the model of the image degradation/restoration process and explain various blocks.  
b) Explain full-colour and pseudo-colour digital image processing. **(10+10)**
3. a) Define discrete and continuous wavelet transforms. Explain the desirable properties of wavelet transform.  
b) Discuss Haar wavelet and Daubechies wavelet. Compute the Haar transform of the following image. **(10+10)**

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

4. a) What is an 'edge' in an image ? Briefly explain the three stages of the Canny edge detector.  
b) Suppose an image  $f(m, n)$  of size  $256 \times 256$  with edge operator of size  $32 \times 32$  is given. Then design the steps to perform the operation in frequency domain by applying the Laplacian of a Gaussian edge operator. **(10+10)**
5. Write short notes on **any two** of the following :
  - a) Pattern and Pattern classes.
  - b) Region-based segmentation.
  - c) Full-color image processing. **(10 each)**

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M.Phil./Ph.D. Course Work Examination, 2016  
CHEMISTRY (Paper – II)  
A) Recent Trends in Physical Chemistry

Day and Date : Wednesday, 10-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

- 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.**

1. A) Describe experimental procedure used in preparation of thin films using Sol-gel. Discuss applications of these films in fabrication of devices. **10**
- B) Answer **any two** of the following : **10**
- i) Explain application of P-N-P transistor as an amplifier.
  - ii) What is capacitor ? Discuss application of capacitor in photovoltaic cell.
  - iii) Discuss basic principle used in preparation of thin films of organic semiconducting materials using spin coating method.
2. A) Answer the followings : **10**
- i) Explain with suitable schematic diagram the working of a double beam Mass Spectrometer.
  - ii) Larmor equation in NMR spectroscopy.
- B) Attempt **any two** of the following : **10**
- i) Finger print region and group frequency region.
  - ii) Applications of Mass spectrometry for determination of molecular weight.
  - iii) Discuss J-coupling in  $^1\text{H}$  NMR.

P.T.O.



3. A) Discuss the term heat capacity of solids. Describe the Debye model of heat capacity. **10**
- B) Explain **any two** of the following : **10**
- i) Lennard Jones potential.
  - ii) Temperature dependence of heat capacity of solids.
  - iii) Intra and intermolecular hydrogen bonding in liquids.
4. A) What is micellar catalysis ? Give some examples. Deduce kinetic equation for such reactions. **10**
- B) Write notes on **any two** of the following : **10**
- i) Autocatalysis
  - ii) Adsorption theory of catalysis
  - iii) Catalytic promoters and poisons.
5. A) Discuss positive catalysts, negative catalysts and induced catalysts with suitable examples. **10**
- B) Write notes on **any two** of the following : **10**
- i) Debye equation of polarization of liquids.
  - ii) Determination of excess volume of liquid mixture.
  - iii) Symmetry elements of simple cubic crystal system.
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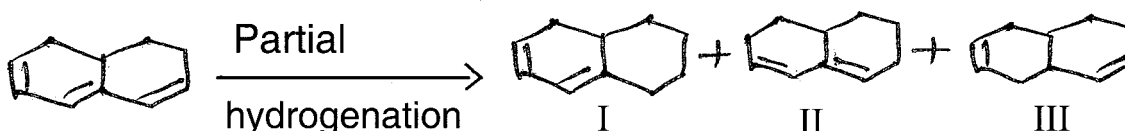
M.Phil./Ph.D. Course Work Examination, 2016  
CHEMISTRY (Paper – II)  
c) Recent Trends in Organic Chemistry

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

- N. B. :** i) Attempt **all five** questions.  
ii) **All** the questions carry **equal** marks.  
iii) Figures to the **right** indicate **full** marks.

1. A) What is stereospecific and stereoselective reactions ? Explain with suitable examples. **10**  
B) Solve **any two** of the following : **10**  
i) What is Barton's reaction ? Give its mechanism with suitable examples.  
ii) Explain the reaction, mechanism and applications of Hunsdiecker reaction.  
iii) Write a note on Umpolung concept.
2. A) Give an account of the stereochemistry of ring fusion in Yohimbine. **10**  
B) Solve **any two** of the following : **10**  
i) Explain the p-fluoronitrobenzene shows the following  $^1\text{H}$  NMR data.  
7.2 (f,  $J = 8$  Hz, 12 mm)  
8.25 (dd,  $J = 4$  and 8 Hz, 12 mm)  
ii) Explain TMS is used as internal standard in  $^1\text{H}$  NMR spectroscopy.  
iii) Describe fragmentation pattern of benzyl alcohol.
3. A) Describe Woodward and Prevost dihydroxylation with suitable examples. **10**  
B) Solve **any two** of the following : **10**  
i) The following triene on partial hydrogenation gives three products. How uv spectroscopy and Woodward-Fieser rules will help to identify products ?



- ii) Write note on  $\text{S}_{\text{N}}1$  reaction.  
iii) What is IPSO substitution ? Explain with suitable examples.



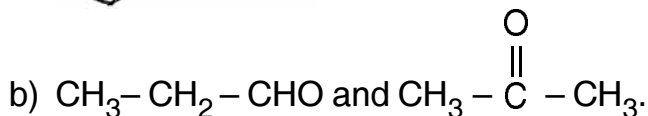
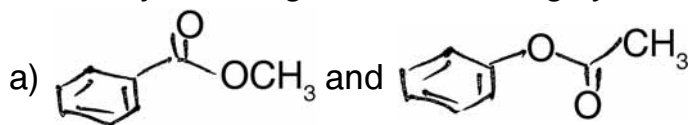


4. A) Explain the NOESY experiments with suitable examples. 10

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

i) Discuss 2D-NMR (COSY) spectroscopy.

ii) How will you distinguish the following by NMR ?



iii) Describe base peak in mass spectroscopy.

5. A) Describe the stereochemistry and synthesis of cholestane. 10

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

i) Assign the structure of compound which exhibits the following data :

M.F. –  $\text{C}_8\text{H}_7\text{OCl}$

IR ( $\gamma$ ) : 3300, 1690, 1600, 1500, 830  $\text{cm}^{-1}$

$^1\text{H NMR}$  ( $\delta$ , ppm) : 2.5 (s), 3H

7.3 (d,  $J = 8$  Hz) 2H

7.9 (d,  $J = 8$  Hz) 2H

Mass ( $m/z$ ) : 154/156 (3 : 1)

139/141 (3 : 1)

111/113 (3 : 1)

ii) Assign the structure of compound which shows the following data :

M. F. –  $\text{C}_4\text{H}_8\text{O}_2$ .

IR ( $\gamma$ ) : 3049 – 2924, 1445, 1736  $\text{cm}^{-1}$

$^1\text{H NMR}$  ( $\delta$ , ppm) : 0.9 (f) 3H

1.2 (sextet) 2H

3.4 (f) 2H

8.4 (s) 1 H

iii) Assign the structure of compound which shows following data :

M.F. –  $\text{C}_9\text{H}_{11}\text{NO}_2$

$\lambda_{\text{max}}$  295 nm

IR ( $\gamma$ ) : 3227, 3410, 3000, 1680  $\text{cm}^{-1}$

$^1\text{H NMR}$  ( $\delta$ , ppm) : 1.5 (t) 3H

4.1 (s) 2H

4.3 (q) 2H

6.6 (d) 2H

7.7 (d) 2H



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**M.Phil./Ph.D. Course Work Examination, 2016**  
**CHEMISTRY (Paper – II)**  
**E) Recent Trends in Analytical Chemistry**

Day and Date : Wednesday, 10-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

- N.B. :** 1) **All questions are compulsory.**  
2) **Figures to the right indicate full marks.**  
3) **Draw neat and labeled diagrams wherever necessary.**  
4) **Use of log table and calculator is allowed.**

1. A) What do you mean by emission spectra in AES ? Discuss the application in determining alkali metals by flame photometry. 10
- B) Attempt **any two** of the following : 10
- i) Explain various applications of polarographic analysis.
- ii) Discuss instrumentation of ESR.
- iii) Explain the principle of ion pair chromatography.
2. A) Explain construction, working and advantages of DME. 10
- B) Discuss **any two** of the following : 10
- i) Direct current plasma.
- ii) Limitations of amperometric titration.
- iii) Thermogravimetric analysis.
3. A) What do you mean by ESR ? Discuss its application in analytical chemistry. 10
- B) Attempt **any two** of the following : 10
- i) Explain the curve obtained in amperometric titration.
- ii) Explain flame emission spectroscopy.
- iii) Discuss the technique in gel chromatography.



4. A) Discuss the principle of ion-pair extraction and give application of ion pair chromatography. **10**
- B) Write note on **any two** of the following : **10**
- i) Differential thermal analysis.
  - ii) Working principle of polarography.
  - iii) Dropping mercury electrode.
5. A) What is thermometric titrations ? Discuss their applications. **10**
- B) Explain **any two** of the following : **10**
- i) Oscillographic polarography.
  - ii) ICT instrumentation.
  - iii) Bonded phase chromatography.
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**M.Phil./Ph.D. Course Work Examination, 2016**  
**CHEMISTRY**  
**Paper – III : A) Modern Topics in Physical Chemistry**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Answer **any two** of the following : **10**
- i) Show that atomic packing factors of simple cubic and body centered cubic crystal are 0.524 and 0.74 respectively.
  - ii) Europium crystallizes in bcc lattice. Its density is  $5.26 \text{ gm cm}^{-3}$ . Calculate the radius of the Eu atom. The Atomic weight and packing factor of Eu are  $152 \text{ gm mole}^{-1}$  and 0.68 respectively.
  - iii) Discuss hexagonal close packing (hcp) crystal structure.
- B) Describe crystal structures of zinc blend and rock salt. **10**
2. A) Derive Bragg's Law for diffraction of X-ray from crystal plane. How this law is verified ? Describe the X-ray diffraction spectrometer method of determination of wave length of X-ray. **10**
- B) Answer **any two** of the following : **10**
- i) Discuss  $\sin^2$  ratio method of indexing of the peaks recorded on X-ray diffraction profile.
  - ii) X-ray with a wave length of  $0.58 \text{ \AA}$  are used for calculating  $d_{200}$  in nickel. The reflection angle for first order is  $9.5^\circ$ . What is the size of the unit cell.
  - iii) Discuss significance of X-ray Scattering factor in explaining anomalous behavior of KCl during diffraction of X-ray.



3. A) What is Neutron Activation Analysis (NAA) ? Discuss application of NAA in determination of age of wood. **10**
- B) Write notes on **any two** of the following : **10**
- i) Radiometric titration
  - ii) Radiocarbon dating.
  - iii) Applications of radio isotopes in agriculture.
4. A) How will you distinguish nanocrystalline materials from nano materials ? Discuss chemical vapour deposition method of preparation of nanocrystalline CdSe thin films. **10**
- B) Answer **any two** of the following : **10**
- i) What are nanocomposites ? How are they prepared ? Discuss UV – visible spectroscopy of these materials for the studies of optoelectronic properties.
  - ii) What are ruby and corundum crystals ? Describe hydrothermal method of preparation of high quality single ruby crystal.
  - iii) Describe sol-gel method of preparation of ceramic products.
5. A) Describe with suitable optical ray diagram Scanning Electron Microscope and discuss how photoimages are useful to study surface morphology of materials. **10**
- B) Answer **any two** of the following : **10**
- i) Explain semiconducting behavior of silicon when doped with a trivalent and pentavalent element.
  - ii) Write note on Curie and Neel temperature.
  - iii) Discuss with examples ferromagnetic and antiferromagnetic materials.
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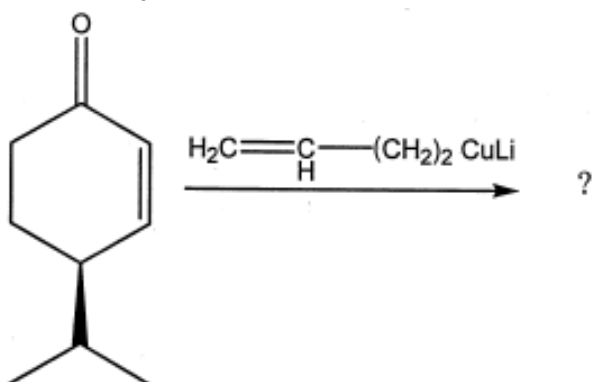
**M.Phil./Ph.D. Course Work Examination, 2016**  
**CHEMISTRY (Paper – III)**  
**C) Modern Topics in Organic Chemistry**

Day and Date : Thursday, 11-08-2016

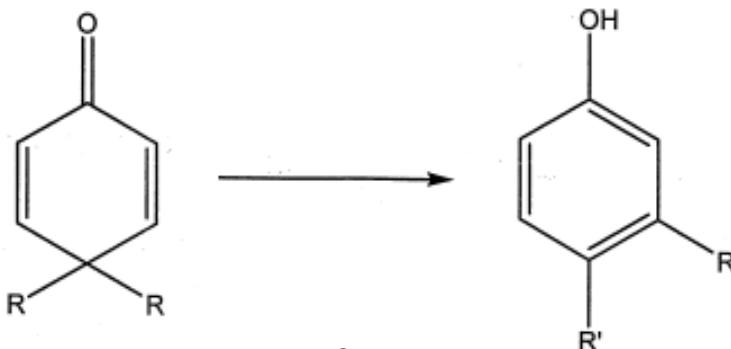
Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Discuss Stobbe reaction with mechanism. Give its applications. **10**  
B) Answer **any two** : **(2×5)**  
i) Give the mechanism of Mannich reaction in the synthesis of  $\beta$ -indole acetic acid.  
ii) Write an account of Robinson annulations.  
iii) Formulate the mechanism of Birch reduction.
2. A) Describe application of Stille coupling reaction in C-C bond formation. **10**  
B) Answer **any two** : **(2×5)**  
i) Write the product and mechanism in the following :



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

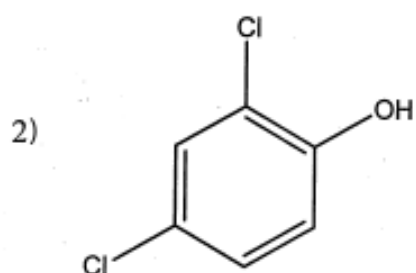
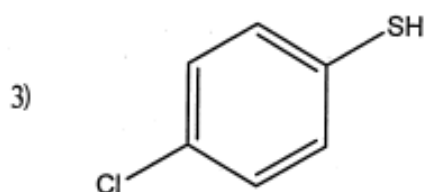
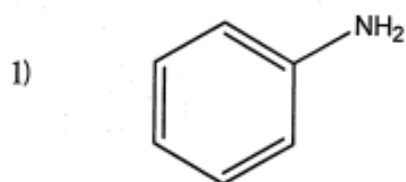


- iii) What is hydroboration ? Describe the mechanism of hydroboration.



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

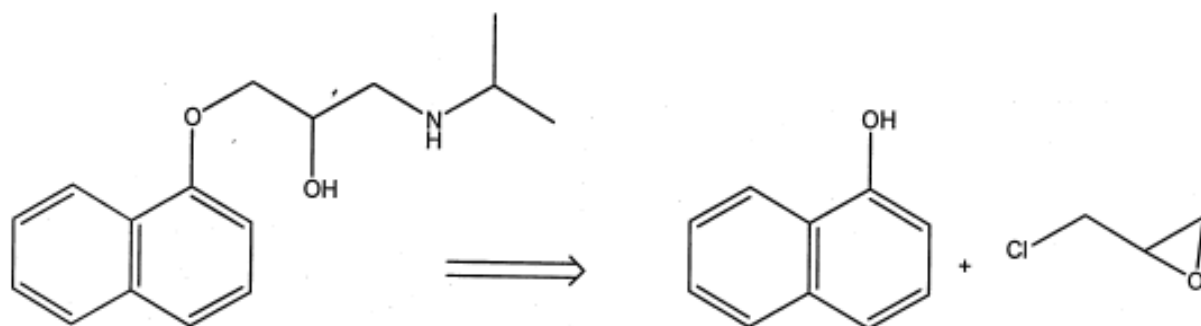
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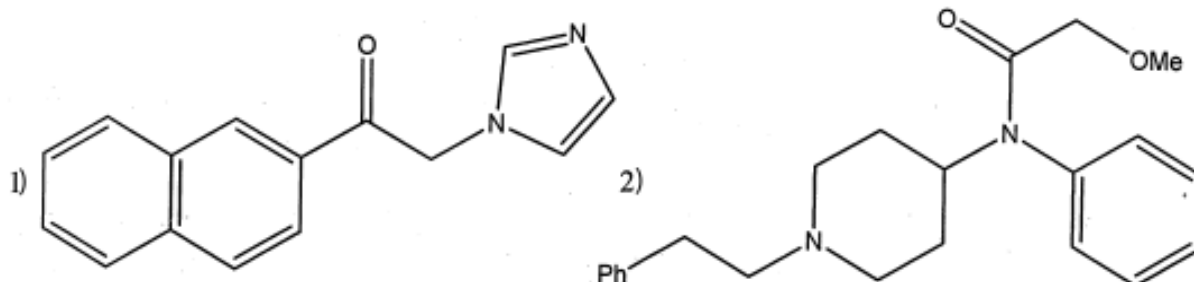
B) Answer **any two** :

(2x5)

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

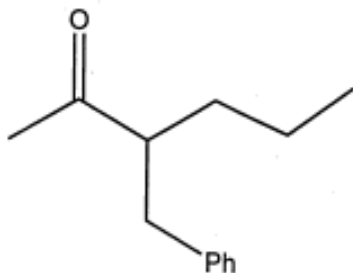


ii) Carryout the retrosynthetic analysis of the following and suggest useful synthetic route :





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



4. A) Give the synthesis of Gilman reagent. Describe its applications in organic synthesis. 10
- B) Answer **any two** : (2×5)
- i) Explain the use of Antiarrhythmic agents.
  - ii) Explain the use of hormones and antibiotics for the treatment of cancer.
  - iii) Give synthesis and SAR of methyldopa.
5. A) What are transition metal complex ? Describe their utility in organic synthesis. 10
- B) Answer **any two** : (2×5)
- i) Explain stereoselective reaction with suitable example.
  - ii) Describe applications of organozinc compounds in organic synthesis.
  - iii) Explain chemoselectivity with suitable example.
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**M.Phil./Ph.D. Course Work Examination, 2016**  
**CHEMISTRY (Paper – III)**  
**E) Modern Topics in Analytical Chemistry**

Day and Date : Thursday, 11-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Give the principle and working of LC-MS technique with few suitable applications. **10**
- B) Write short answer on **any two** : **10**
- i) How can be obtaining the elemental composition, chemical state and electronic state from XPS that exist within the material ?
  - ii) Explain the characteristics of fluorescence emission with reference of Stokes shift and independent of wavelength.
  - iii) How will you able to differentiate between the following pair using  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR data ?  
 $\text{H}_3\text{C-CO-CH}_3$  and  $\text{H}_3\text{C-CO-CH}_2\text{-CH}_2\text{-CH}_3$
2. A) Give the principle of X-ray diffraction technique. How X-ray diffraction pattern are used to determine the crystal structure and crystallite size of the materials ? **10**
- B) Write short answer on **any two** : **10**
- i) Explain the ICH guidelines with reference to quality, efficacy, safety and multidisciplinary approach.
  - ii) State the principle of supercritical fluid extraction chromatography with few applications.
  - iii) How the fluoride ion content can be determined by ion chromatography ?
3. A) Describe the principle; working and applications of HPLC. Mention its advantages and disadvantages. **10**
- B) Short answer type **any two** : **10**
- i) Write a note on the application of ionchromatography.
  - ii) Discuss the dereplication of natural products and metabolism studies.
  - iii) Explain the term chemical shift and discuss the factors influencing the chemical shift.



4. A) Give the meaning of base peak and ion peak of mass spectrum. How these peaks are used to interpret the organic structure ? **10**
- B) Write short answer on **any two** : **10**
- i) Explain the analytical terms like accuracy and precision with their importance in chemical analysis.
  - ii) Write a critical note on HPLC.
  - iii) Deduce the structure of an unknown organic compound consistent with following spectral data  
MF :  $C_8H_8O_3$   
IR : 3300-2600(br), 1690, 1600, 820  $cm^{-1}$   
PMR : 3.9 (3H, S), 7.05 (2H, d, J = 8Hz) 8.1 (2H, d, J = 8Hz), 11.5(1H, br S exchangeable  $D_2O$ )
5. A) Draw the schematic of ICP-MS instrument and explain the working of each component. **10**
- B) Write short answer on **any two** : **10**
- i) Columns of the HPLC.
  - ii) Applications of Fluorescence.
  - iii) Scanning Electron Microscope.
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M.Phil./Ph.D. Course Work Examination, 2016  
CHEMISTRY (Paper – IV)  
Organic Chemistry  
C) Advanced Development in Organic Chemistry

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

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

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

1. A) Explain the role of thalium nitrate and  $\text{SeO}_2$  in organic synthesis. Give suitable examples. 10
- B) State applications of **any two** of the following : 10
  - i) Vitamin K
  - ii) Vitamin-D
  - iii) Organo manganese compounds.
2. A) Give different methods of epoxidation with mechanism. 10
- B) Explain **any two** of the following : 10
  - i) Norrish type-I and Norrish type-II rearrangement
  - ii) Cis-trans isomerisation of azo compounds
  - iii) Leuckart reaction.
3. A) Discuss photochemical reactions of arenes and dienes. 10
- B) Describe use of **any two** of the following : 10
  - i) Super critical fluid
  - ii) Isolated enzymes
  - iii) Zeolites.

P.T.O.



4. A) What is hydroformylation ? Explain with mechanism and applications. **10**
- B) Give synthesis of **any two** of the following : **10**
- i) Vitamin-K
  - ii) Bisabolene
  - iii) Phenols from aromatic aldehydes.
5. A) What are plant growth regulators ? Give an account of cytokinins as plant growth regulators. **10**
- B) Discuss the use of ammonium polysulphide in organic synthesis. Give mechanism of the concerned reaction. **10**
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Seat No.	
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**M.Phil./Ph.D. Course Work (Chemistry) Examination, 2016**  
**ANALYTICAL CHEMISTRY (Paper – IV)**  
**E) Advanced Development in Analytical Chemistry**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

- Instructions :** i) *All questions are compulsory.*  
ii) *All questions carry equal marks.*  
iii) *Figures to right indicate full marks.*  
iv) *Draw neat labeled diagram wherever necessary.*

1. A) What are the basic principles of solvent extraction ? Explain the term separation efficiency. How is it depend ? Explain with suitable examples. **10**
- B) Write short answers of the following (**any two**) : **10**
- i) Continuous counter current extraction.
  - ii) Single component analysis.
  - iii) Separation of silver by precipitation.
2. A) Define the term oxidation and reduction. What is a galvanic cell ? What is the source of electrical energy in the galvanic cell ? **10**
- B) Explain the following terms (**any two**) : **10**
- i) Complexometric titration.
  - ii) Role of potassium dichromate and iodine in redox titration.
  - iii) Redox indicators.
3. A) What types of errors are generally involved in analytical work ? Give examples. Distinguish carefully between determinate and indeterminate errors. **10**
- B) Write short notes (**any two**) : **10**
- i) Standard deviation and average deviation.
  - ii) Use of significant figures.
  - iii) Accuracy.



4. A) What do you mean by radiometric titration ? Give its types. Explain the advantages and disadvantages of radiometric titration. **10**
- B) Explain the following terms (**any two**) : **10**
- i) Neutron activation analysis.
  - ii) Radiochromatography.
  - iii) Applications of radio analytical techniques.
5. A) What is the theoretical aspect of precipitation titration ? Explain the experimental procedure for the determination of halide ion in neutral solution. **10**
- B) Explain the following terms (**any two**) : **10**
- i) Titration involving unidentate ligand.
  - ii) Precision.
  - iii) Application of solvent extraction for separation of metal ions.
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**Ph.D. Course Work Examination, 2016**  
**STATISTICS**  
**Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in Statistics**  
**Elective – A : Industrial Statistics**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

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

1. a) Illustrate with suitable example use of control charts in quality improvement. What is statistical basis for a control chart ? **10**
- b) Answer **any two** of the following :
- i) Explain X-bar control chart in detail. **5**
  - ii) Assuming normality obtain an expression for ARL of X-bar control chart, when standards are known. **5**
  - iii) Discuss advantages of process control over product control. **5**
2. a) Discuss in detail np chart. Derive control limits for the same and obtain an expression for OC function. **10**
- b) Answer **any two** of the following :
- i) What are runs rules ? How do they affect performance of the chart ? **5**
  - ii) Define beta content and beta expectation tolerance intervals and explain use of the tolerance intervals in quality control. **5**
  - iii) Define process capability index  $C_p$  and assuming normality give interpretation for  $C_p$  values. **5**
3. a) Describe role of sampling plans in quality control. What are various types of sampling plans ? Define the terms AOQ, LTPD, Producer's risk, Consumer's risk. **10**
- b) Answer **any two** of the following :
- i) Explain double sampling plan for attributes. **5**
  - ii) Obtain ASN and ATI functions of double sampling plan by attributes. **5**
  - iii) Derive AOQ for single sampling plan. **5**



4. a) Describe tabular CUSUM chart procedure in detail. What are the advantages of CUSUM over Shewhart control chart ? **10**
- b) Answer **any two** of the following :
- i) Explain the construction of V mask CUSUM chart. **5**
  - ii) Discuss control chart based on extreme values. **5**
  - iii) Write a note on non-parametric tolerance intervals. **5**
5. a) Describe continuous sampling plan CSP-1 and obtain AOQL for the same. **10**
- b) Answer **any two** of the following :
- i) Explain construction of c chart. **5**
  - ii) Explain the variable sampling plan when lower specification is given and  $\sigma$  is known. **5**
  - iii) Discuss estimation of process capability index  $C_p$ . **5**
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**Ph.D. Course Work Examination, 2016**  
**MICROBIOLOGY**  
**Paper – II : Recent Trends in Microbiology**

Day and Date : Wednesday, 10-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

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

1. A) Explain principle, working and applications of HPLC. **10**  
B) Write notes on (**any two**). **10**
  - i) Northern blotting.
  - ii) Principle of visible spectroscopy.
  - iii) Importance of lipid profiling.
2. A) Write in detail principle, working and applications of PCR. **10**  
B) Write short notes on (**any two**) : **10**
  - i) Basic concepts of IR.
  - ii) GM Counter.
  - iii) Cloning strategies.
3. A) Explain in detail principle, working and applications of Gas Chromatography. **10**  
B) Explain in short (**any two**). **10**
  - i) Principle of ion exchange Chromatography.
  - ii) Applications of SDS-PAGE.
  - iii) Significance of gene sequencing.

P.T.O.



4. A) Write an essay on DNA fingerprinting. **10**
- B) Write in brief (**any two**). **10**
- i) TLC.
  - ii) Principle of PFGE.
  - iii) Restriction mapping.
5. A) Explain in detail various types of centrifugation techniques. **10**
- B) Explain in brief (**any two**). **10**
- i) Principle of atomic absorption spectroscopy.
  - ii) Autoradiography.
  - iii) Polyphasic taxonomy.
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Seat No.	
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**Ph.D. Course Work Examination, 2016  
MICROBIOLOGY (Old)  
Paper – III : Modern Topics in Microbiology**

Day and Date : Thursday, 11-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Discuss in detail synthesis of different types of nanoparticles. **10**  
B) Explain **any two** of the following : **10**
    - 1) BLAST phylogenetic analysis
    - 2) Use of HPLC in metabolic profiling
    - 3) Principle and applications of SDS-PAGE.
  2. A) How will you use genome sequence for vaccine production ? Explain in detail. **10**  
B) Answer in brief (**any two**) : **10**
    - 1) What are the advantages of nanobiotechnology ?
    - 2) What is meant by restriction mapping ?
    - 3) What are the tools used for prokaryotic genomics ?
  3. A) How will you use metagenomics for knowing the microbial diversity ? **10**  
B) Write short notes on (**any two**) : **10**
    - 1) Comparative proteomics
    - 2) Overview of sequence analysis
    - 3) Applications of DNA microarray.
  4. A) Explain in detail the use of mass spectrometry for proteomic analysis. **10**  
B) Answer in brief (**any two**) : **10**
    - 1) What is meant by heterologous expression ?
    - 2) Give the therapeutic applications of gold nanoparticles.
    - 3) Give the relation between metagenomics and drug delivery.
  5. A) Discuss in detail metabolic profiling and fingerprinting. **10**  
B) Write short notes on (**any two**) : **10**
    - 1) Culture independent methods of microbial identification.
    - 2) Biosensors and microarray.
    - 3) Selection of chromatography methods to be used in metabolome analysis.
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**Ph.D. Course Work Examination, 2016**  
**MICROBIOLOGY (Paper – III) (New) and (Paper – IV) (Old)**  
**Advanced Developments in Microbiology**  
**A) Medical Microbiology and Immunology**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

***N. B. : i) All questions are compulsory.***  
***ii) Figures to the right indicate full marks.***

1. A) Discuss in detail the recent advances in serological diagnosis. **10**  
B) Write short notes on **(any two)** : **10**
  - i) Cryptococcosis
  - ii) Rubella
  - iii) Trichomonas vaginalis.
  
2. A) Describe etiology, pathogenicity and laboratory diagnosis of Tuberculosis. **10**  
B) Write short notes on **(any two)** : **10**
  - i) Dengue
  - ii) Measles
  - iii) Lymphokines.
  
3. A) Write an essay on “Immunoprophylaxis and Immunotherapy”. **10**  
B) Write short notes on **(any two)** : **10**
  - i) Entamoeba histolytica
  - ii) Mumps
  - iii) Interleukins.



4. A) Discuss the recent developments in Monoclonal antibody technology. **10**
- B) Write short notes on **(any two)** : **10**
- i) Interferon
  - ii) Hepatitis
  - iii) Candidiasis.
5. A) Describe the general properties and pathogenicity of HIV. **10**
- B) Write short notes on **(any two)** : **10**
- i) Ebola
  - ii) Polio
  - iii) Cholera.
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Seat No.	
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**Ph.D. Course Work Examination, 2016  
MICROBIOLOGY**

**Paper – III (New) and Paper – IV (Old) : Advanced Developments in  
Microbiology**

**B) Environmental and Agricultural Microbiology**

Day and Date : Friday, 12-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

**Instructions :** 1) Answer **all** questions.  
2) **All** questions are **compulsory**.

1. A) Write an essay on 'Bioremediation'. 10
- B) Write short notes on (**any two**). 10
  - i) Microbial life at low temperature.
  - ii) Root Zone technology.
  - iii) Isolation and enumeration of Methanogens.
2. A) Write in detail Epidemiology of plant diseases and Biological control of Soil borne plant pathogens. 10
- B) Write short notes on (**any two**). 10
  - i) Characterization of waste generated by Tannary Industry.
  - ii) EIA and EA.
  - iii) Microbial life in hyper saline environment.
3. A) Discuss in detail Microorganisms in waste treatment technology. 10
- B) Write short notes on (**any two**). 10
  - i) Preparation and applications of Biofertilizer.
  - ii) Types of Bioreactors.
  - iii) General characteristics of wastes.



4. A) Write in detail characterization and treatment of waste generated by Antibiotic and Dairy industries. **10**
- B) Write short notes on (**any two**). **10**
- i) Activated sludge process.
  - ii) Characterization of waste generated by Textile Industry.
  - iii) Microbiology of Hot and Acid springs.
5. A) Write in detail Primary, Secondary and Tertiary treatments for sewage and Industrial wastes. **10**
- B) Write short notes on (**any two**). **10**
- i) Cost economics of waste treatment.
  - ii) Trickling filter.
  - iii) Mass scale production of EM for waste treatment.
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Seat No.	
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**Ph.D. Course Work Examination, 2016**  
**ENVIRONMENTAL SCIENCE**  
**Paper – II : Recent Trends in Environmental Science**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

**N.B. :** i) **Each** question carries **equal** marks.  
ii) Part – **A** of the questions are **compulsory**.  
iii) Solve **any two** from given **three** questions from Part – **B** of question.

1. A) Give the principle and working of Turbidometer. 10  
B) Write in brief on **any two** of the following : 10
  - a) Application of X-ray fluorescence
  - b) Use of Remote Sensing in Environmental Science.
  - c) Remote Sensing in world and India.
  
2. A) Explain principle, components and working of AAS. 10  
B) Write in brief on **any two** of the following : 10
  - a) Mass spectrophotometer
  - b) FTIR
  - c) Ion Chromatography.
  
3. A) Applications of GIS and RS in Forest Management. 10  
B) Write in brief on **any two** of the following : 10
  - a) Scope of GIS
  - b) Sources of errors in GPS
  - c) ICPEs.





4. A) Applications of GIS in Marine Resources management. **10**
- B) Write in brief on **any two** of the following : **10**
- a) Application of GPS
  - b) GIS in geological mapping
  - c) NMR.
5. A) How flame photometer works, draw a labelled diagram ? **10**
- B) Write in brief on **any two** of the following : **10**
- a) Types of aerial photographs
  - b) Application of GIS in disaster management
  - c) Satellite imageries.
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<b>Seat No.</b>	
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**Ph.D. Course Work Examination, 2016  
BOTANY (Paper – II)  
Recent Trends in Botany**

Day and Date : Wednesday, 10-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Explain Giger-Muller and Liquid Scintillation counter. **10**
- B) Attempt **any two** of the following : **10**
- i) Describe NMR Spectrometry.
  - ii) Explain the micrometry technique.
  - iii) Describe the methods of sterilization.
2. A) Describe the method of herbarium preparation. **10**
- B) Attempt **any two** of the following : **10**
- i) Describe MASS spectrometry.
  - ii) Explain dark field microscopy.
  - iii) Describe the principles and applications of a Camera Lucida.
3. A) Describe the equipments used in culture techniques. **10**
- B) Attempt **any two** of the following : **10**
- i) Describe affinity chromatography.
  - ii) Explain Beer-Lamberts law.
  - iii) Describe applications of micrometry.

**P.T.O.**



4. A) Describe various steps involved in microtomy technique. **10**
- B) Attempt **any two** of the following : **10**
- i) Describe the role of isotopes in biochemistry.
  - ii) Explain density gradient separation.
  - iii) Describe fixatives used in cytological techniques.
5. A) Explain principles involved in phase contrast and scanning electron microscope. **10**
- B) Attempt **any two** of the following : **10**
- i) Describe microphotography.
  - ii) Explain basic principles of centrifugation.
  - iii) Describe applications of UV-VIS absorption spectrophotometry.
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SLR-BP – 100

Seat No.	
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Ph.D. Course Work Examination, 2016  
BOTANY (Paper – III)  
Advanced Development in Botany  
C) Plant Physiology (New)

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

**Instructions :** 1) Attempt **all** questions.  
2) **All** questions carry **equal** marks.  
3) Draw **neat** and labeled diagrams **wherever** necessary.

1. A) Describe the methods of preparation for various concentrations of Molar, Normal and Buffer solutions. 10
- B) Answer **any two** of the following : 10
  - i) Mode of action of enzyme activity.
  - ii) Mechanism of nitrate uptake.
  - iii) Mechanism of thermal tolerance.
2. A) Describe the methods of classification of enzymes. 10
- B) Write short notes on **any two** of the following : 10
  - i) Flavonoids
  - ii) Photoperiodism
  - iii) Effects of ROS on metabolism.
3. A) Explain the process of nitrate reduction and transamination. 10
- B) Answer **any two** of the following : 10
  - i) Hydrogen ion concentration
  - ii) Nature of enzyme
  - iii) 'nif' Gene.

P.T.O.



4. A) Explain effects of SO<sub>2</sub> on plant metabolism. **10**
- B) Write note on **any two** of the following : **10**
- i) Generation of ROS
  - ii) Vernalisation
  - iii) Phenols.
5. A) Give an account of isolation, characterization and classification of enzymes. **10**
- B) Answer **any two** of the following : **10**
- i) Photo protection mechanism
  - ii) Hormonal regulation enzymes
  - iii) Enzyme Nitrogenase.
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Seat No.	
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**Ph.D. Course Work Examination, 2016**  
**BOTANY**  
**Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in Botany**  
**A) Mycology and Plant Pathology**

Day and Date : Friday, 12-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

- Instructions :**
- i) **All questions are compulsory.**
  - ii) **Draw neat labelled diagrams wherever necessary.**
  - iii) **Figures to the right indicate full marks.**

1. A) What are the different criteria used for classifying Fungi ? Explain a brief classification of fungi with suitable examples. **10**
- B) Answer **any two** of the following : **10**
- i) Explain the Agents of dispersal of fungal spores.
  - ii) Write note on Thallus structure of fungi.
  - iii) Explain with suitable examples hypertrophy and hyperplasia.
2. A) Explain different steps in culturing pathogenic Fungi and staining methods. **10**
- B) Answer **any two** of the following : **10**
- i) Give an account symptoms caused by Bacteria.
  - ii) Write note on Mycoplasma/phytoplasma like organism.
  - iii) Elucidate Koch's postulates.
3. A) How does plant disease forecasting help to control diseases ? **10**
- B) Answer **any two** of the following : **10**
- i) Give an account of Edible mushrooms.
  - ii) Write an account of Disease Assessment.
  - iii) Explain the factors affecting epidemic diseases.

P.T.O.



4. A) What is gene transfer technology ? Under what circumstances and in which class of organisms is most useful in this technique ? **10**
- B) Answer **any two** of the following : **10**
- i) Explain the diseases of mushrooms.
  - ii) Explain the role of mycorrhizal fungi in agriculture.
  - iii) What are bio-insecticides ? Explain with suitable examples.
5. A) Explain the physical methods of controlling plant diseases. Why is it considered important ? **10**
- B) Answer **any two** of the following : **10**
- i) Explain the importance of crop rotation.
  - ii) Give an account of Fungicides.
  - iii) Cultivation of Oyster mushrooms.
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Seat No.	
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Ph.D. Course Work Examination, 2016  
BOTANY

Advanced Development in Botany

B) Taxonomy of Angiosperms (Paper – III) (New) and Paper – IV (Old)

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) What are principles and notes on the strategies used for conservation. **10**  
B) Write notes on **any two** of the following : **10**
    - i) Rejection of names and authors citation
    - ii) Aims and principles of Taxonomy
    - iii) General evolutionary trend in Angiosperms with respect to habitat.
  2. A) Explain principles and outline the Dahlgren's system of classification. **10**  
B) Answer **any two** of the following : **10**
    - i) Notes on classical species concept.
    - ii) Functions of the Plant Taxonomy.
    - iii) What is typification ? Explain priority of names.
  3. A) Note on effective and valid publication and comment on homonyms. **10**  
B) Short notes on **any two** of the following : **10**
    - i) Field gene bank
    - ii) General account on Botanical Survey of India
    - iii) Vegetative reproduction in Angiosperms as evolutionary trend.
  4. A) Explain non-dimensional and multidimensional species concept. **10**  
B) Answer **any two** of the following : **10**
    - i) What is Botanical gardens and its role in conservation ?
    - ii) Functions of DBT and DST.
    - iii) Outline of Cronquist's system of classification.
  5. A) Merits and demerits of Bentham and Hookers system of classification. **10**  
B) Write short notes on **any two** of the following : **10**
    - i) Principles and rules of ICBN
    - ii) Modern species concept
    - iii) NBPGR and its role in ex-situ conservation.
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Seat No.	
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**Ph.D. Course Work Examination, 2016**  
**ECONOMICS (Old)**  
**Paper – II : Recent Trends in International Economics**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Describe the effects of economic growth on trade of developed countries. **10**  
B) Answer **any two** questions of the following : **10**
  - i) How trade can affect the technology transformation ?
  - ii) Elucidate the role of MNCs in the promotion of trade.
  - iii) What is meant by terms of trade ?
2. A) Discuss the Vernon's product cycle theory. **10**  
B) Answer **any two** questions of the following : **10**
  - i) Comment on intra-industry trade.
  - ii) What do you know about imitation gap ?
  - iii) Elucidate the term dumping.
3. A) Examine the role of WTO in promoting international trade. **10**  
B) Answer **any two** questions of the following : **10**
  - i) Distinguish between GATT and WTO.
  - ii) Elucidate the post WTO economic environment of the world.
  - iii) What do you know about the WTO and India ?



4. A) Assess the trends in composition of India's trade in the reform era. **10**
- B) Answer **any two** questions of the following : **10**
- i) Describe the salient features of India's trade policy after 1991.
  - ii) Discuss the liberalisation measures adopted in India.
  - iii) Enlist the efforts of India to promote exports in the globalisation period.
5. A) Examine the trends in foreign direct investment of India. **10**
- B) Answer **any two** questions of the following : **10**
- i) Comment on foreign direct investment policy of India.
  - ii) Explain the role of FDI in export infrastructure development.
  - iii) Discuss the impact of WTO on productive sectors of Indian economy.
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**Ph.D. Course Work Examination, 2016**  
**ECONOMICS (New)**  
**Paper – II : Advanced Theories in Economics**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Examine the Revealed Preference Theory of demand analysis. **10**  
B) Answer **any two** questions of the following : **10**
  - i) Describe the substitution effect in Indifference curve analysis of demand.
  - ii) What do you know about the price elasticity of demand ?
  - iii) Elucidate the applications of the indifference curve analysis of demand.
  
2. A) Describe the various cost curves in traditional and modern approaches. **10**  
B) Answer **any two** questions of the following : **10**
  - i) What do you mean production possibility curve ?
  - ii) What is meant by production function ?
  - iii) What do you know about the Cobb-Douglas production function ?
  
3. A) Describe price and output determination under the Price leadership model of Collusive oligopoly. **10**  
B) Answer **any two** questions of the following : **10**
  - i) Elucidate the characteristics of Monopolistic competitive market.
  - ii) Describe the Edgeworth model of Non-Collusive oligopoly.
  - iii) Discuss on Paul Sweezy's contribution to the Oligopoly.



4. A) Evaluate the Williamson model of managerial discretion. **10**
- B) Answer **any two** questions of the following : **10**
- i) Write a note on the behavioural model of Cyert and March.
  - ii) What do you know about the Baumol's model ?
  - iii) What do you mean by satisfying behaviour of the firm ?
5. A) Evaluate the Hall and Hitch report on pricing of goods. **10**
- B) Answer **any two** questions of the following : **10**
- i) Describe the Neo classical views on the rate of interest.
  - ii) Write a note on the relative effectiveness of monetary and fiscal policies in IS-LM model.
  - iii) Elucidate the Modigliani model of pricing.
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**Ph.D. Course Work Examination, 2016**  
**ECONOMICS**  
**Paper – III (New) (A) : Economics of Agriculture and**  
**Co-operation**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Discuss the role of agriculture in economic development. **10**  
B) Write short notes on **any two** of the following : **10**
  - i) Growth with social justice in agriculture.
  - ii) Optimum product combination.
  - iii) Food security.
2. A) Discuss the importance of new agricultural technology and shift in production function. **10**  
B) Write short notes on **any two** of the following : **10**
  - i) Law of diminishing return.
  - ii) Input-input relationship.
  - iii) Problems of dairy co-operatives in Maharashtra.
3. A) Critically discuss the progress of irrigation in India. **10**  
B) Write short notes on **any two** of the following : **10**
  - i) Post-harvest technology.
  - ii) Precision farming.
  - iii) Problems of sugar co-operatives in Maharashtra.

P.T.O.



4. A) Discuss the importance and progress of institutional agricultural finance in India. **10**
- B) Write short notes on **any two** of the following : **10**
- i) Horticulture and floriculture.
  - ii) HRD in co-operatives.
  - iii) Problems of Urban co-operative banks in Maharashtra.
5. A) Discuss on recent principles of co-operation. **10**
- B) Write short notes on **any two** of the following : **10**
- i) Problems of agro-processing industries.
  - ii) Organic farming.
  - iii) Problems of housing co-operatives in Maharashtra.
-



SLR-BP – 107

Seat No.	
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**Ph.D. Course Work Examination, 2016**  
**ECONOMICS (Paper – IV)**  
**A) Economics of Agriculture**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Explain the role of agriculture in economic development. **10**  
B) Short answer type (**any two**) : **10**
  - i) Boserup Model.
  - ii) Land degradation.
  - iii) Post Harvesting Technology.
2. A) Review the stages of production function with special reference to agricultural sector. **10**  
B) Short answer type (**any two**) : **10**
  - i) Regional disparities in agriculture.
  - ii) Corporate farming.
  - iii) Role of NABARD in agriculture.
3. A) Mention the provisions of WTO relating to agriculture. State its benefits. **10**  
B) Short answer type (**any two**) : **10**
  - i) Agricultural Export.
  - ii) Optimum factor combination.
  - iii) Plant breeder's and farmer's rights.

P.T.O.



4. A) Examine the Centre State relationship in agricultural development. **10**
- B) Short answer type (**any two**) : **10**
- i) Watershed development in India.
  - ii) Expansion path of agricultural production.
  - iii) Agricultural Pricing.
5. A) Analyse the National Agricultural Policy adopted in India. **10**
- B) Short answer type (**any two**) : **10**
- i) Optimum use of inputs in agriculture.
  - ii) Institutional system of Agricultural Finance in India.
  - iii) Food Security in India.
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SLR-BP – 110

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**Ph.D. Course Work Examination, 2016**  
**A.I.H.C. & A**  
**Recent Trends in Indian Culture and Archaeology (New)**  
**Paper – II**

Day and Date : Wednesday, 10-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Explain the various phases of development in the Stone Ages. 10
- B) Write short answers on **any two** of the following :
- 1) Megaliths. 5
- 2) Stone Age Tools. 5
- 3) Stone Age Dwellings. 5
2. A) Discuss in brief through the archaeological sources, the Religious Life of Indus Valley people. 10
- B) Write short answers on **any two** of the following :
- 1) Harappan Social Life. 5
- 2) Harappan Weights. 5
- 3) New discoveries related to Indus Valley Civilization. 5
3. A) Elucidate in brief the various features of Jainism. 10
- B) Write short answers on **any two** of the following :
- 1) Buddhism. 5
- 2) Shaivism. 5
- 3) Shakti. 5

P.T.O.



4. A) Explain in brief the various techniques of exploration. **10**
- B) Write short answers on **any two** of the following :
- 1) Horizontal Excavation. **5**
  - 2) Site Survey. **5**
  - 3) Vertical Excavation. **5**
5. A) Explain in brief about the importance of archaeology in reconstructing the past. **10**
- B) Write short notes on **any two** of the following :
- 1) C-14 Dating. **5**
  - 2) Potassium Argon Dating. **5**
  - 3) Relative Dating. **5**
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**Ph.D. Course Work Examination, 2016**  
**AIHC & A**  
**Paper – III : Research in Indian Art and Architecture (New)**

Day and Date : Thursday, 11-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Discuss in brief, Rock paintings of Bhimbetka. 10  
B) Write short notes on **any two** : 10
  - i) Mauryan lion pillar capital, Sarnath.
  - ii) Auspicious symbols of Shunga art.
  - iii) Priest from Mohen-jo-daro.
2. A) Write in brief about architecture of Sanchi Stupa. 10  
B) Write short notes on **any two** : 10
  - i) Rock-cut caves at Barabar hill.
  - ii) Kanava dynasty and its art.
  - iii) Mauryan palace, Pataliputra.
3. A) Describe in brief about Bharhut Stupa. 10  
B) Write short notes on **any two** : 10
  - i) Yakshis of Bharahut.
  - ii) Bull capital, Rampurva.
  - iii) Rock-cut elephant, Dhauri.

P.T.O.



4. A) Discuss the architecture of Karle Chaitya. 10
- B) Write short notes on **any two** : 10
- i) Vihara of Bhaje.
  - ii) Sea-shore temple, Mahabalipuram.
  - iii) Mukteshwar temple, Bhubaneshwar.
5. A) Write in brief about Kandariya Mahadeva temple, Khajuraho. 10
- B) Write short notes on **any two** : 10
- i) Panchayatan temple.
  - ii) Cave No. 1, Badami.
  - iii) Characteristic features of “Bhumija” temple architecture.
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**Ph.D. Course Work Examination, 2016**  
**LIBRARY AND INFORMATION SCIENCE**  
**Paper – II : Recent Trends in Library and Information Science**

Day and Date : Wednesday, 10-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) What is ICT ? Describe the role of ICT in the development of LIS centres. **10**  
B) Short answers type (Solve **any two**) : **10**
    - i) E-Governance
    - ii) Web 2.0
    - iii) Library 2.0
  2. A) Describe the Collection Development Policy of E- Resources. **10**  
B) Short answers type (Solve **any two**) : **10**
    - i) Dublin Core
    - ii) Intellectual Property Right
    - iii) Digital Libraries.
  3. A) Describe the Resource Sharing in Internet Era. **10**  
B) Short answers type (Solve **any two**) : **10**
    - i) UGC-INFONET
    - ii) Role of Internet in Library and Information Centres
    - iii) Resource Sharing at International Level.
  4. A) What is RDBMS ? Discuss the RDBMS in detail. **10**  
B) Short answers type (Solve **any two**) : **10**
    - i) Linux
    - ii) Open Source Software
    - iii) DBMS.
  5. A) What is Information Literacy ? Describe IFLA's standards for Information Literacy. **10**  
B) Short answers type (Solve **any two**) : **10**
    - i) RFID
    - ii) Computer Literacy
    - iii) Routers.
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**SLR-BP – 115**

<b>Seat No.</b>	
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**Ph.D. Course Work Examination, 2016  
LIBRARY AND INFORMATION SCIENCE (Paper – III)  
Modern Topics in Library and Information Science**

Day and Date : Thursday, 11-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) What are the recent managerial concept of comparative management philosophies ? Describe in detail. **10**
- B) **Any two :**
  - 1) Discuss the various functions of management. **5**
  - 2) Elaborate various recruitment as selection procedures. **5**
  - 3) What is job analysis ? **5**
2. A) Mention and discuss the type of organizational structures. Explain them. **10**
- B) **Any two :**
  - 1) What do you understand by human resource management ? **5**
  - 2) Define communication and elaborate its role in management. **5**
  - 3) Describe the motivational theories. **5**
3. A) What factors are to be taken into account while preparing a budget ? Elaborate. **10**
- B) **Any two :**
  - 1) Advantages of outsourcing. **5**
  - 2) What are consultancy services ? **5**
  - 3) Discuss the PPBS. **5**

P.T.O.



4. A) What do you understand by PERT/CPM, how is it useful to decision makers ? **10**
- B) **Any two :**
- 1) Reengineering library user services for the present era. **5**
  - 2) What is six sigma ? **5**
  - 3) Discuss SWOT analysis in the context of a library. **5**
5. A) Discuss the role of TQM in library and information. **10**
- B) **Any two :**
- 1) Write short notes on Mind Mapping. **5**
  - 2) What are the various sources of books selection ? **5**
  - 3) Distinguishing between knowledge management and information management. **5**
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**Ph.D. Course Work Examination, 2016**  
**HISTORY (Paper – II)**  
**Recent Trends in History**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

1. A) Discuss the nature of Colonialism theory of history. 10
- B) Answer **any two** : (5×2=10)
- i) Write a note on James Mill theory his great ideas of liberalism and humanism.
- ii) Critically evaluate the cultural consciousness against class consciousness.
- iii) Discuss the writings of V. A. Smith.
2. A) Write a note on Nationalist approach of history. 10
- B) Answer **any two** : (5×2=10)
- i) Discuss the contributions of Mount Stuart EPhistone consciousness to ancient Indian Historiography.
- ii) Assess the work of ideas of K. P. Jayaswal.
- iii) Discuss the writings of Irfan Habib.
3. A) Discuss the contributions of R. C. Datta to cultural and humanistic approaches of history. 10
- B) Answer **any two** : (5×2=10)
- i) Discuss the writings of M. G. Ranade.
- ii) Write a note on history of colonial economy and commercial economy in the 19<sup>th</sup> Century.
- iii) Discuss the writings of Bipin Chandra.

P.T.O.





4. A) Assess the works and ideas of D. D. Kosambi. 10
- B) Answer **any two** : (5×2=10)
- i) Discuss the contributions of Sumit Sarakar to history.
  - ii) Write a note on Subaltern school of history.
  - iii) Trace the post modernist attitude of history.
5. A) Discuss the theory of world system and post modernist history. 10
- B) Answer **any two** : (5×2=10)
- i) Write a note on historical materialism.
  - ii) Discuss the important of Local history of Maharashtra.
  - iii) Write a note on Writings of Ranjit Guha.
-



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**Ph.D. Course Work Examination, 2016**  
**HISTORY (Paper No. – III) (Old/New)**  
**Modern Topics in History**

Day and Date : Thursday, 11-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

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

1. A) State the origin and development of Vaishnav sect. in Ancient India. **10**  
B) Short answers (attempt **any two**) : **10**  
i) Jainese philosophy in Ancient India.  
ii) Description of the Buddha sculpture of Ellora.  
iii) Describe the social life in Mughal period.
2. A) Explain the teaching and philosophy of Bouddha Religion. **10**  
B) Short answers (attempt **any two**) : **10**  
i) Write a note on the Gandhar Art in Ancient India.  
ii) Write about the industries in Vijayanagar Empire.  
iii) Explain the religious policy of Akbar.
3. A) Write an essay on industries in period of Chh. Shivaji Maharaj. **10**  
B) Short answers (attempt **any two**) : **10**  
i) Write short answer on social life in Maratha period.  
ii) Discuss the Revenue Administration under the Peshwa period.  
iii) Explain the concept of Maharashtra Dharm.

P.T.O.



4. A) Give the causes rise the British rule in Maharashtra. **10**
- B) Short answers (attempt **any two**) : **10**
- i) Discuss the causes commercialisation of agriculture in British India.
  - ii) Write a note on the education system in British Maharashtra.
  - iii) Describe the impact of the Elphinstone period of Maharashtra.
5. A) What are the causes of renaissance in India ? **10**
- B) Short answers (attempt **any two**) : **10**
- i) Explain the dual system in Bengal in British India.
  - ii) Write short answer on Feminist movement of British India.
  - iii) Write note on Peasant movement in British India.
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**Ph.D. Course Work Examination, 2016**  
**HISTORY : Paper – III (New) and Paper – IV (Old)**  
**Advanced Development in History**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) Critically examine the features of Indian constitution. 10  
B) Write short answers of **any two** : 10
    - 1) Objectives of planning.
    - 2) Development of technology.
    - 3) Nature of first five year plan.
  2. A) State the development of science. 10  
B) Write short answers of **any two** : 10
    - 1) Development of post.
    - 2) Consolidation of Holdings.
    - 3) Objectives of fourth five year plan.
  3. A) Write the nature of tourism. 10  
B) Write short answers of **any two** : 10
    - 1) Industrial policy of 1970.
    - 2) Development of Railway.
    - 3) Kargil conflict.
  4. A) State the importance of green revolution. 10  
B) Write short answers of **any two** : 10
    - 1) Ceiling of landholdings.
    - 2) Industrial policy of Janta Govt.
    - 3) New economic policy of 1991.
  5. A) State the aspects of agricultural policy after 1964. 10  
B) Write short answers of **any two** : 10
    - 1) Motives of tourism.
    - 2) Defence position of India.
    - 3) Development of irrigation.
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**Ph.D. Course Work Examination, 2016**  
**PSYCHOLOGY**  
**Paper – II : Recent Trends in Psychology**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Discuss filter theory of attention. 10  
B) Answer **any two** short notes of the following : 10
    - 1) Sensation of vision.
    - 2) Observational learning.
    - 3) Iconic memory.
  2. A) Bring out the nature of short term memory. 10  
B) Answer **any two** short notes of the following : 10
    - 1) Critical thinking
    - 2) Intelligence
    - 3) Emotion.
  3. A) Describe the theories of emotion. 10  
B) Answer **any two** short notes of the following : 10
    - 1) Classical problems
    - 2) Organisational principles of perception
    - 3) Cognition in learning.
  4. A) Discuss the approaches to the study of reasoning. 10  
B) Answer **any two** short notes of the following : 10
    - 1) Sensation of taste
    - 2) Working memory
    - 3) Extinction and spontaneous recovery
  5. A) Bring out the nature of reinforcement schedules. 10  
B) Answer **any two** short notes of the following : 10
    - 1) Group differences in intelligence
    - 2) Sensation of smell
    - 3) Biogenic motives.
-



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Ph.D. Course Work Examination, 2016  
PSYCHOLOGY

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

**A) Advanced Development in Clinical and Counseling Psychology**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

**N.B. :** 1) Attempt **all** questions.

2) Figures to the **right** indicate **full** marks.

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.
2. A) Explain the importance of projective techniques as diagnostics point of view. **10**
- B) Write short answers (**any two**). **10**
  - 1) Explain the Alfred Adler's theory according to Psychopathological point of view.
  - 2) Give importance of decision making in career planning.
  - 3) State causes of mental retardation.
3. A) Explain the cognitive modification in some clinical disorder with Illustration. **10**
- B) Write short answers (**any two**). **10**
  - 1) Explain the mood disorder.
  - 2) State the causes of schizophrenia.
  - 3) State the techniques of Freudian analysis.

P.T.O.



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.
5. A) Distinguish the case study method and experimental method as a diagnostic method in clinical Psychology. **10**
- B) Write short answers (**any two**). **10**
- 1) Explain the Dissociative personality disorder.
  - 2) Explain humanistic model of clinical Psychology.
  - 3) State the cognitive behavioral therapy.
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**Ph.D. Course Work Examination, 2016**  
**SOCIAL WORK (New)**  
**Paper – II : Recent Trends in Social Work**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Trace the historical development of social work as profession in India. **10**  
B) Give answers in short (**any two**) : **10**  
1) Goal of social work education  
2) Values of social work  
3) Family and child welfare.
2. A) What are the emerging trends in industrial relation ? Explain. **10**  
B) Give answers in short (**any two**) : **10**  
1) Concept of HRD  
2) HRM practice in India  
3) Human approach in industry.
3. A) Critically examine the programmes and policies for tribal community. **10**  
B) Give answers in short (**any two**) : **10**  
1) Panchayatraj  
2) Problems of rural community  
3) Developmental programmes for urban community.

P.T.O.





4. A) Highlight the emerging issues of women. **10**
- B) Give answers in short (**any two**) : **10**
- 1) Welfare programmes for children
  - 2) Women empowerment
  - 3) Child welfare policies.
5. A) Write a detailed note on mental health policies and programmes. **10**
- B) Give answers in short (**any two**) : **10**
- 1) Development of medical social work
  - 2) Health development programmes
  - 3) Mental hygiene.
-



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**Ph. D. Course Work Examination, 2016**  
**SOCIAL WORK (New)**  
**Paper – III : Social Work & Social Development**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) Discuss the ideology of the Indian Constitution. 10  
B) Write short answers on **(any two)** : 10
  - i) Social Work Research and Knowledge.
  - ii) Social Responsibility and Managerial Ethics.
  - iii) Dealing with stress.
2. A) Critically evaluate the Youth Welfare Policy of India. 10  
B) Write short answers **(any two)** : 10
  - i) Sexuality Counselling.
  - ii) Male Child Adoption.
  - iii) Women and Politics.
3. A) Discuss with examples steps in the process of Social Work Research. 10  
B) Write short notes on **(any two)** : 10
  - i) Gender studies.
  - ii) Fundamental Rights.
  - iii) Karl Marx - theory of class and class conflict.

P.T.O.



4. A) Explain the important areas and social policy. **10**
- B) Write short notes on **(any two)** : **10**
- i) Adjustment problems.
  - ii) Economically weaker section.
  - iii) Crisis intervention.
5. A) Write an essay on history of feminist thought in global context. **10**
- B) Write short notes on **(any two)** : **10**
- i) Poverty Alleviation.
  - ii) Social Justice.
  - iii) Ideology of Dr. B. R. Ambedkar.
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**Ph.D. Course Work Examination, 2016**  
**MASS COMMUNICATION AND JOURNALISM**  
**(Paper – II) : Mass Communication and Society**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Explain the communication model of Willbure Schramme with diagram. **10**  
B) Answer **any two** questions of the following : **10**  
i) Write in details about barriers in the way of communication.  
ii) How can the mass media contribute in social change.  
iii) Explain the contribution of early Marathi language news papers in Maharashtra reference to social change.
2. A) Describe the freedom of press and ethics. **10**  
B) Answer **any two** questions of the following : **10**  
i) Modern Media have became vehicle of inter-culture communication – Discuss.  
ii) Explain the importance of first press commission report.  
iii) Describe the contribution of Johhan Gutennburg in printing press.
3. A) Write an article on crime and mass media. **10**  
B) Answer **any two** questions of the following : **10**  
i) Write in early History of information technology in India.  
ii) Explain communication as a social science.  
iii) Mentioned kinds of communication with suitable examples.

P.T.O.



4. A) Write in detail about eminent Journalist of Marathi language Newspaper in 19<sup>th</sup> century in Maharashtra. **10**
- B) Answer **any two** questions of the following : **10**
- i) Explain the Shannon Weavers communication model in detail.
  - ii) Language is an important medium of communication in social developments – Discuss.
  - iii) Explain social responsibility theory in details.
5. A) Describe the impact of mass media on school children. **10**
- B) Answer **any two** questions of the following : **10**
- i) Describe communication process, with diagram.
  - ii) Highlight participation theory its importance.
  - iii) Write in detail about press council.
-



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**Ph.D. Course Work Examination, 2016**  
**MASS COMMUNICATION AND JOURNALISM**  
**Mass Communication in New Millennium (Paper – III)**

Day and Date : Thursday, 11-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Who are 'Digital Immigrants' and 'Digital Natives' in new millennium ? Discuss their challenges and advantages in access to information using ICT. 10
- B) Write short answers on **any two** of the following :
  - 1) What is 'Social Media' and its role in 'accessible India' campaign ? 5
  - 2) Importance of 'participatory communication'. 5
  - 3) What are the models of 'Development Communication' ? Give examples. 5
2. A) What is the significance of 'Citizen Journalism' and 'Community Media' with reference to development communication ? 10
- B) Write short answers on **any two** of the following :
  - 1) Write a note on aim of Mass Communication in new millennium and choice to the user. 5
  - 2) What is 'market driven media' ? 5
  - 3) What are the advantages and limitations of 'social media content' ? 5
3. A) Write a note on the significance of modern media and traditional media in development communication. 10
- B) Write short answers on **any two** of the following :
  - 1) Role of multimedia in cultural integration. 5
  - 2) What are the effects of localization and culture on media system ? Discuss in brief. 5
  - 3) Write a short note on 'Glocalisation' and 'Localisation'. 5

P.T.O.



4. A) Write an essay on International Communication and challenges for journalists working in new media. **10**
- B) Write short answers on **any two** of the following :
- 1) Social and cultural effects of new media. **5**
  - 2) Information over load and multimedia. **5**
  - 3) What do you know about 'cognitive load' ? **5**
5. A) Elucidate with example what could be the effects of new media on old media. **10**
- B) Write short notes on **any two** of the following :
- 1) Right to information and digital divide. **5**
  - 2) Access to information and ICT. **5**
  - 3) ICT and empowerment through digital India. **5**
-



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**Ph.D. Course Work Examination, 2016**  
**MASS COMMUNICATION AND JOURNALISM (Paper No. – IV)**  
**Media Production Techniques**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

**Instructions :** i) **All questions are compulsory.**  
ii) **All questions carry equal marks.**

1. A) What is the exact difference between private radio and community radio ? **10**  
B) Answer in short (**any two**) : **10**  
i) News web portals  
ii) TV camera movements  
iii) Public relation plan.
2. A) Why production of house journals is required in corporate industry ? **10**  
B) Answer in short (**any two**) : **10**  
i) Writing for television  
ii) Printing technology  
iii) Information technology.
3. A) Explain types of Internet connection with examples. **10**  
B) Answer in short (**any two**) : **10**  
i) Basics of TV camera  
ii) Ad copy and layout  
iii) Exhibition.

P.T.O.





4. A) Write flow chart of production of colour advertisement. **10**
- B) Answer in short (**any two**) : **10**
- i) Social networking
  - ii) Reporting and ENG equipments
  - iii) Digital publishing.
5. A) What do you mean by public relation explain with suitable examples. **10**
- B) Answer in short (**any two**) : **10**
- i) Types of microphones
  - ii) Radio studio
  - iii) TV camera movements.
-



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**Ph.D. Course Work Examination, 2016**  
**RURAL DEVELOPMENT**  
**Paper – III : Emerging Issues and Concepts in Rural Development**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Discuss the role of Foreign Aid in Rural Development in India. **10**  
B) Write short answers of **any two** of the following questions : **10**
    - i) Write short note on MIS, GIS and GPS.
    - ii) Explain the concept of bilateral and multilateral aid for Rural Development.
    - iii) Write short note on Human Poverty Index (HPI).
  2. A) Write Amartya Sen's views on Poverty and Famine. **10**  
B) Write short answers of **any two** of the following questions : **10**
    - i) Write note on Social Audit.
    - ii) Explain the methods of computing HDI.
    - iii) Elaborate the critique of HDI.
  3. A) What is Corporate Social Responsibility (CSR) ? Discuss the dimensions of CSR. **10**  
B) Write short answers of **any two** of the following questions : **10**
    - i) Write note on Micro-planning.
    - ii) Explain the concept of Landscape Heritages.
    - iii) Elaborate importance of CSR for Rural Development.
  4. A) Write contribution of Mohamed Yunis in Micro Finance and Empowering Locals. **10**  
B) Write short answers of **any two** of the following questions : **10**
    - i) Write note on commodities and capabilities.
    - ii) Write note on values and development.
    - iii) Explain the concept of Gender Development Index (GDI).
  5. A) Elaborate Human Development Measures and its indicators. **10**  
B) Write short answer of **any two** of the following questions : **10**
    - i) Discuss the methods of computing HDI.
    - ii) Explain emerging trends in Agri-tourism.
    - iii) Elaborate emerging trends in Rural Tourism.
-



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**M.Phil./Ph.D. Course Work Examination, 2016**  
**EDUCATION (Paper – II)**  
**Recent Trends in Education (Old)**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

1. A) Describe the role, functions and any two financial assistance schemes of UGC. 10
- B) Answer **any two** of the following. 10
  - a) Explain the concept of constructivism.
  - b) Explain the concept of e-learning.
  - c) Explain the role of NCTE in Teacher education.
2. A) Describe **any two** of the following : 10

Innovative teaching strategies.

  - a) Blended learning
  - b) Collaborative teaching
- B) Answer **any two** of the following : 10
  - a) Explain the importance of mobile learning.
  - b) Explain the functions of NCERT.
  - c) Explain the techniques of continuous and comprehensive evaluation system.
3. A) Describe the process of Assessment and Accreditation of NAAC. 10
- B) Answer **any two** of the following : 10
  - a) Explain the aspects of sustainable development.
  - b) State the definitions of semester, grading and credit system.
  - c) Explain the concept of inclusive education. P.T.O.



4. A) Describe the quality concerns in educational research. **10**
- B) Answer **any two** of the following : **10**
- a) Explain the concept of cloud computing.
  - b) Explain the challenges of digital age.
  - c) State the salient features of RTE 2009.
5. A) Describe various types of android educational apps. **10**
- B) Answer **any two** of the following : **10**
- a) Explain the concept of virtual classroom.
  - b) Explain the concept of open university.
  - c) Explain the concept of Brain-based learning.
-



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**Ph.D. Course Work Examination, 2016  
EDUCATION (Paper – II)  
Recent Trends in Education**

Time : 3 Hours

Max. Marks : 100

1. A) How you will create the Media Literacy and Character Education in your students ? 10
- B) Write answer of the following questions (**any two**) :
  - 1) What are the challenges of Higher Education in 21<sup>st</sup> Century and how you will be phase ? 5
  - 2) What are importance of the short term courses in the context of teacher ? 5
  - 3) What is meant by quality assurance ? 5
2. A) Explain the concept of T.Q.M. (Total Quality Management) in Higher Education. 10
- B) Write answer of the following questions (**any two**) :
  - 1) Explain the trait theories of leadership. 5
  - 2) Write note on any innovative activity in teacher education. 5
  - 3) Explain the concept of alternative assessment. 5
3. A) How you will make the difference in between equity and excellence with examples ? 10
- B) Write answer of the following questions (**any two**) :
  - 1) What are the benefits of assessment and accreditation in higher education ? 5
  - 2) What is meant by multigrade teaching ? 5
  - 3) Explain the concept of quality Audit in Higher Education. 5

P.T.O.



4. A) What are the theories of leadership and what is the need of behaviour theories of leadership ? **10**
- B) Write answer of the following questions (**any two**) :
- 1) How you will improve the quality in self financing of higher education ? **5**
  - 2) Write note on 'concept of leadership'. **5**
  - 3) Explain the concept of Enjoyable Education. **5**
5. A) What is meant by education for internationalisation and how you will create integrity of internationalisation in society, student and in our country ? **10**
- B) Write answer of the following questions (**any two**) :
- 1) What is the use of teleconferencing in the context of distance student ? **5**
  - 2) Explain the concept of sustainable education for future. **5**
  - 3) Which are the qualities of leadership ? **5**
-



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**M.Phil./Ph.D. Course Work Examination, 2016**  
**EDUCATION (Old)**  
**Paper – III : Modern Topics in Education**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) What is meant by Functional Behavioral Assessment ? Explain the assessment procedure of FBA with examples. **10**
- B) Attempt in brief **any two** of the following : **10**
  - i) Explain the concept of brain compatible and suggest some strategies for brain compatible.
  - ii) What needful changes does teacher adopt to face challenges due to globalization ?
  - iii) Which are the external factors effects teaching ?
2. A) Why it is said that, returns from education investment is very less in India ? **10**
- B) Attempt in brief **any two** of the following : **10**
  - i) Explain the unit cost of a higher education in India.
  - ii) How educational investment is profitable ? Explain.
  - iii) Explain the concept of 'Cost of Education'.
3. A) Quality of Education plays pivotal role in the process of nation's development. **10**
- B) Attempt in brief **any two** of the following : **10**
  - i) How will you improve work culture in higher education ?
  - ii) Which are the challenges in of quality of education in higher education ?
  - iii) Which are the social values in higher education ?

P.T.O.



4. A) School is the process of Socialization. Discuss. **10**
- B) Attempt in brief **any two** of the following : **10**
- i) Write down the improvement of Child Education.
  - ii) What will you suggest to overcome the problems of large class ?
  - iii) Explain the role of education in community development.
5. A) Illustrate with an example, how will you use internet and various applications associated with it to enhance the teaching-learning process. **10**
- B) Attempt in brief **any two** of the following : **10**
- i) Multisensory Teaching – Explain its concept.
  - ii) Encyclopedia and websites are useful in research – Explain.
  - iii) Give the causes of AIDS with preventive measures.
-





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**M.Phil./Ph.D. Course Work Examination, 2016**  
**EDUCATION (New)**  
**Paper – III : Advanced Development in Education**

Day and Date : Thursday, 11-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. Explain the Value Awareness, Accountability and Transformational Models of Human Right Education. 20  
OR  
Discuss Kolb's Experiential Learning Theory with examples.
  2. Give the recommendation of Primary Education in National Policy on Education 1986 and Programme Action of 1992. 20  
OR  
Discuss the Dellor's Report.
  3. a) Explain the relation between Education and Globalization. 10  
b) Explain the essential Life Skills for Personal Development. 10  
OR  
a) Discuss the Universalization of Institutes and their functions. 10  
b) Explain the concept of Brain Based Research. 10
  4. Short answer (**any five**) : 40
    - 1) Explain the need of value education.
    - 2) Explain aims of Peace Education.
    - 3) Explain the relation between economics of production and cost.
    - 4) What are the functions of UGC ?
    - 5) Discuss decentralization of funding.
    - 6) Explain the concept of Global education.
    - 7) Discuss the objectives of Higher Education.
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**M.Phil./Ph.D. Course Work (New) Examination, 2016**  
**C) EDUCATION**  
**Paper – III : Teacher Education**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

1. Explain and compare the face to face Vs distant mode approaches of teacher education. 20  

OR

Explain and compare the constructive and task analysis component training approaches.
  2. Explain the role of different medias in teacher education. 20  

OR

Explain the concept, nature and aims of teacher education.
  3. A) Explain the teacher through process. 10  
B) Explain the role of NCTE in teacher education. 10  

OR

A) Explain the concept of teacher effectiveness. 10  
B) Explain the concept of classroom management. 10
  4. Write **any five** of the following : 40
    - a) The process of decision making in the classroom
    - b) Concept of staff development in the classroom
    - c) Concept and process of seminar
    - d) Integrated approach of teacher education
    - e) Cascade model of teacher training
    - f) Recommendations of Kothari Commission for teacher education
    - g) Designing of self-learning package.
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**M.Phil./Ph.D. Course Work Examination, 2016**  
**EDUCATION**  
**Paper – IV : Advanced Development in Education**

Day and Date : Friday, 12-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Explain use of Internet in teaching and learning. **10**  
B) Answer the following (**any two**) :
  - i) What are advantages of SPSS package ? **5**
  - ii) What is impact of 'Secondary Education Commission' on secondary education. **5**
  - iii) Explain the educational contribution of Mahatma Gandhi with special reference to the Women Education. **5**
2. A) Explain important features of 'University Education Commission'. **10**  
B) Answer the following (**any two**) :
  - i) Explain use of 'Descriptive Statistics' in Educational Research. **5**
  - ii) Explain advantages of virtual learning. **5**
  - iii) What is educational importance of Anthony Graser's model of learning style ? **5**
3. A) Why is it important for teacher to know learning styles of students ? **10**  
B) Answer the following (**any two**) :
  - i) What are characteristics of spatial learning style ? **5**
  - ii) What is role of 'Education Commission' ? **5**
  - iii) Explain the educational contribution of Fredrich Frobel in present context. **5**

P.T.O.



4. A) How will you use SPSS Package in your data analysis ? **10**
- B) Answer the following (**any two**) :
- i) What are characteristics of Linguistic learning style ? **5**
  - ii) Explain importance of Inferential Statistics. **5**
  - iii) What is importance of storyboard writing in e-content development ? **5**
5. A) Explain the educational contribution of Rabindranath Tagore and its relevance of social context during that period. **10**
- B) Write notes on the following (**any two**) :
- i) Educational contribution of John Dewey. **5**
  - ii) Important features of NPE 1986. **5**
  - iii) Strategies of e-learning. **5**
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**Ph.D. Course Work Examination, 2016**  
**COMMERCE**  
**Recent Trends in Commerce (Paper – II)**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

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

1. a) What is E-Commerce ? Explain the different levels of E-Commerce. **10**  
b) Write notes on **any two** : **10**
    - i) E-Marketing
    - ii) Online Banking
    - iii) Electronic Shopping.
  2. a) Describe various business application used in Social Commerce ? **10**  
b) Write notes on **any two** : **10**
    - i) Mobile Commerce
    - ii) Wireless Wallet
    - iii) RFID.
  3. a) State in detail emerging trends in International trade. **10**  
b) Write notes on **any two** : **10**
    - i) Decision Support System
    - ii) Total Quality Management
    - iii) Business intelligence.
  4. a) What is E-Customer Relationship Management ? Explain the various stages in E-Customer Relationship Management. **10**  
b) Write notes on **any two** : **10**
    - i) Internet Modelling
    - ii) Video Conferencing
    - iii) E-Business.
  5. a) What are the main reasons for growing share of the service sector in all major economies in the world ? **10**  
b) Write notes on **any two** : **10**
    - i) E-Stock trading
    - ii) Supply chain management
    - iii) E-retailing.
-



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**Ph.D. Course Work Examination, 2016  
COMMERCE  
Modern Topics in Management (Paper – III) (Old)**

Day and Date : Thursday, 11-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) What is Globalisation ? How Globalisation made effective changes in Indian Economy ? **10**
- B) Write short notes on **(any two)** : **10**
- i) Current trends in strategic management.
  - ii) Total Quality Management.
  - iii) Disaster Management.
2. A) Explain the meaning and importance of organisational behaviour. **10**
- B) Write short notes on **(any two)** : **10**
- i) Six sigma.
  - ii) ISO Quality standards.
  - iii) Spirituality in management.
3. A) State the emerging trends in Human Resource Development. **10**
- B) Write short notes on **(any two)** : **10**
- i) Human Capital.
  - ii) Learning model.
  - iii) HRD mechanism.

P.T.O.



4. A) What is stress management ? Explain the sources of stress in organisation. **10**
- B) Write short notes on (**any two**) : **10**
- i) Work life Balance.
  - ii) Indian Ethos for management.
  - iii) Emotional Quotient.
5. A) Write a detailed note on Corporate Governance. **10**
- B) Write short notes on (**any two**) : **10**
- i) Factors of change.
  - ii) Concept of Organisational Development.
  - iii) Ethical Leadership.
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**Ph.D. Course Work Examination, 2016**  
**COMMERCE**  
**Paper – III (New) and Paper – IV (Old)**  
**A) Advanced Development in Accountancy**

Day and Date : Friday, 12-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) What is Mergers and Acquisition ? Write the objectives and major causes of mergers and acquisition failure. 10
- B) Write **any two** answers of the following questions. 10
- i) Write major differences in Indian GAAP and IFRS.
- ii) Write short note on Budgetary control.
- iii) What is going concern and money measurement concept in accounting ?
2. A) Chandra Manufacturing Co. wishes to arrange over draft facilities with its bankers during the period April to June 2012. When it will be producing mostly for stock purpose. The following data is available from the relevant books. 10

Months	Sales	Purchases	Wages
Feb.	360000	249600	24000
March	384000	288000	28000
April	216000	286000	22000
May	348000	492000	20000
June	252000	536000	30000
July	286000	498000	28000

P.T.O.





**Adjustments :**

50% of credit sales are realised in the month following the sales and remaining 50% in the second month following. The creditors are paid in the month following the month of purchase. Payment of wages and suppliers are made in the following month. Cash at bank on 1-4-2012 (estimated) was Rs. 50,000.

From the above information prepare a Cash Budget for the above period indicating the extent of the bank facilities. The company will require at the end of the each month.

- B) Write **any two** answers of the following questions : **10**
- i) What is responsibility accounting ? State its objectives.
  - ii) Characteristics of derivatives.
  - iii) Difference between Environmental Audit and Social Audit.

3. A) Alfa Company is being acquired by Zebra Company on a share exchange basis. Their selected data are as follows. **10**

	<b>Zebra Co.</b>	<b>Alfa Co.</b>
Profit after-tax (Rs. in lakh)	50	18
No. of shares (lakh)	10	7
Earning per share (in Rupees)	5	2.2
Price-earning ratio	11	6.5

**Determine :**

- i) Pre-merger, market value per share and
  - ii) The maximum exchange ratio. Zebra Company should offer without the dilution of –
    - i) Earning Per Share (EPS).
    - ii) Market value per share.
- B) Write **any two** answers of the following questions. **10**
- i) Write a brief note on investment centre.
  - ii) Quick response and assessment.
  - iii) Advantages of cost audit.



4. A) Budgeted and actual raw material figures are given by Rs. 3,00,000 and 2,75,000. What is variance between two. The Budgeted and Actual labour cost given in figures are Rs. 3,50,000 and Rs. 3,24,000 and overheads are Rs. 40,000 and 30,000. Give your opinion. **10**
- B) Write **any two** answers of the following questions. **10**
- i) How does the balanced scored card measure total business unit performance ?
  - ii) Write short note on asset pricing models.
  - iii) How are financial statements prepared ? When a business enterprise is applying IFRS first time ?
5. A) What is Investigation ? Differentiate between investigation and audit. **10**
- B) Write **any two** answers of the following questions. **10**
- i) Zero base budgeting.
  - ii) Types of Responsibility centres.
  - iii) Development of accounting standards.
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Ph.D. Course Work Examination, 2016  
COMMERCE

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

**B) Advanced Development in Marketing Management (Elective – II)**

Day and Date : Friday, 12-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Explain in detail the impact of globalization on marketing strategy in India. **10**  
B) Solve **any two** of the following : **10**
  - I) Narrate the objectives of Distribution Research.
  - II) What is Marketing Information System ?
  - III) Explain importance of Consumer attitudes.
2. A) Explain the steps involved in designing the Customer Satisfaction Surveys and Analyzing Survey Results. **10**  
B) Solve **any two** of the following : **10**
  - I) Explain the need for New Product Development.
  - II) Describe the tools for Social Marketing.
  - III) Explain the Conjoint Analysis.
3. A) What is Pricing Research ? Why should the companies go for Trading Area Analysis ? **10**  
B) Solve **any two** of the following : **10**
  - I) Explain some before methods for copy testing.
  - II) Why should company go for Media Research ?
  - III) Explain the Database Marketing.

P.T.O.



4. A) Explain in detail measurement of service quality. **10**
- B) Solve **any two** of the following : **10**
- I) Explain some data gathering techniques.
  - II) Discuss the need for segmenting markets.
  - III) What are different rating scales ?
5. A) How does the Marketing Research help managers in decision making ?  
Explain the nature of Marketing Research. **10**
- B) Solve **any two** of the following : **10**
- I) Explain the concept of test marketing.
  - II) What is Sales forecasting ?
  - III) Explain some motivational research techniques.
-



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**Ph.D. Course Work Examination, 2016**  
**COMMERCE**  
**Paper – III (New) and Paper – IV (Old)**  
**C) : Advanced Development in Human Resource Management**

Day and Date :Friday, 12-8-2016

Max. Marks : 100

Time : 11.00 am to 2.00 p.m.

***N.B. : i) Attempt **all** questions.***  
***ii) All questions carry **equal** marks.***

1. a) What is Human Resource Management and Human Resource Development ?  
Discuss in detail. **10**
- b) Write short notes on (**any two**) : **10**
  - i) Scope of HRM
  - ii) Limitations of HRM
  - iii) Human Resource Planning.
2. a) State the determinants of recruitment and explain prerequisites a good  
recruitment policy. **10**
- b) Write notes on (**any two**) : **10**
  - i) Bio-data
  - ii) Reference checks
  - iii) Sources of recruitment.
3. a) What is Job specification ? State its meaning and importance ? **10**
- b) Write notes on (**any two**) : **10**
  - i) Job evaluation
  - ii) Job analysis
  - iii) Job description.

P.T.O.



4. a) State the sources of recruitment and explain the techniques of recruitment. **10**
- b) Write short notes on (**any two**) : **10**
- i) HRM and strategic planning
  - ii) Worklife balance
  - iii) Female work force in multinational companies.
5. a) Discuss in detail internationalisation of Human Resource Management. **10**
- b) Write notes on (**any two**) : **10**
- i) Gender issues in HRM
  - ii) Host country culture
  - iii) Socio-cultural issues in IHRM.
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SLR-BP – 168

Seat No.	
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**Ph.D. Course Work Examination, 2016  
CIVIL ENGINEERING (Old)  
Paper – II : Recent Trends in Civil Engineering**

Day and Date : Wednesday, 10-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

- Instructions:** 1) Solve **all** questions.  
2) Assume any suitable data **wherever** necessary.  
3) Use of non-programmable calculator is **allowed**.

1. a) Explain following features of spreadsheet tools with examples  
i) Writing Formulas and Functions  
ii) Statistical Data Analysis. 10
- b) Explain following features of presentation tool :  
i) Features and functions  
ii) Tips and tricks for making presentation attractive. 10
2. a) Perform five iterations of the Newton Raphson Method to find the root of the equation given below and take the initial approximation as  $x_0 = 2.0$ . 10  
 $x^4 - x - 10 = 0$
- b) Explain eigen values problem and solve following matrix to find its eigen values. 10  
$$\begin{bmatrix} 3 & 4 \\ 7 & 2 \end{bmatrix}$$
3. a) Use 3-point Gaussian Quadrature formula for the integration of following equation. 10  
$$\int_0^1 \frac{dx}{1+x}$$
- b) Find the root of the equation by using Newton Raphson Method. 10  
 $x^3 - 5x + 3 = 0$

P.T.O.



4. a) Write short notes on any two distributions with appropriate engineering examples. **10**
- i) Binomial
  - ii) Normal
  - iii) Log-Normal.
- b) Explain in detail about Markov Chain and Markov Process. **10**
5. a) Explain the terms related to regression analysis :
- i) Bivariate Frequency Distribution
  - ii) Scatter Diagram. **10**
- b) Compute coefficient of correlation for the following data : **10**

<b>x</b>	62	64	65	69	70	71	72	74
<b>y</b>	126	125	139	145	165	152	180	208

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**Ph.D. Course Work Examination, 2016**  
**COMPUTER SCIENCE AND ENGINEERING**  
**Paper – III (New) : Advanced Cloud Computing**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

1. a) What is cloud computing ? What are different benefits of cloud computing ? **10**  
b) Attempt **any two** : **10**
    - 1) What is the security aspects provided with cloud ?
    - 2) What is the requirement of virtualization platform in implementing cloud ?
    - 3) Before going for cloud computing platform what are the essential things to be taken in concern by users ?
  2. a) What are the different layers of cloud computing ? **10**  
b) Attempt **any two** : **10**
    - 1) What is Hypervisor in Cloud Computing and its types ?
    - 2) What are some examples of large cloud providers and their databases ?
    - 3) Which are different services for individual to create cloud service ?
  3. a) What are the different components used in AWS ? **10**  
b) Attempt **any two** : **10**
    - 1) What are the uses of Amazon web services ?
    - 2) What is the function of a Amazon controller ?
    - 3) When and in what order should you migrate your data, applications, operations and workloads to the cloud ?
  4. a) How will your data be secured in the Cloud ? **10**  
b) Attempt **any two** : **10**
    - 1) List down the basic characteristics of cloud computing .
    - 2) What's the management dashboard/control panel like ?
    - 3) What are the multitenancy options ?
  5. a) How you collaborate applications like event, task, schedule and task management ? **10**  
b) Attempt **any two** : **10**
    - 1) How you collaborate web based communication tools ?
    - 2) How you control and collaborate with web based desktop ?
    - 3) Mention in what ways could architecture provide automation and performance transparency ?
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Seat No.	
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**Ph.D. Course Work (New) Examination, 2016**  
**MECHANICAL ENGINEERING (Paper – II)**  
**Modern Topics in Mechanical Engineering from Performance Improvement Perspective**

Day and Date : Wednesday, 10-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

- Instructions:** 1) **Assume** suitable data **if necessary**.  
2) **All** sub-questions must be written together.  
3) Figures to the **right** indicate **full** marks.

1. A) Explain the steps involved in new-product development. **10**  
B) Attempt **any two** of the following : **10**  
a) Write note on new product policies.  
b) Discuss ground rules for good design review.  
c) Write note on product reliability and safety.
2. A) Explain the term 'QFD' and explain its steps. **10**  
B) Attempt **any two** of the following : **10**  
a) Write advantages and limitations of QFD.  
b) Write a note on history of QFD.  
c) Use of QFD in service industries.
3. A) Explain robust design process in detail. **10**  
B) Attempt **any two** of the following : **10**  
a) Explain process control capability.  
b) Explain the term 'Concept design'.  
c) What is technology assessment ?



4. A) Explain in detail process controls. 10
- B) Attempt **any two** of the following : 10
- a) Write short note on ISO 9000 series standards.
  - b) Explain need of quality system certification.
  - c) Explain the phenomenon 'Signal to noise ratio'.
5. A) Explain DMAIC model of six sigma. 10
- B) Attempt **any two** of the following : 10
- a) Explain cause and defect diagram.
  - b) How to perform pareto analysis ?
  - c) Write difference between TQM and six sigma.
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Seat No.	
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**Ph.D. Course Work Examination, 2016**  
**MECHANICAL ENGINEERING (New)**  
**Paper – III : C) Advanced Developments in Thermal Engineering**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

- N.B. :** i) **All questions are compulsory.**  
ii) **Figures to the right indicate full marks.**  
iii) **Assume suitable data wherever necessary.**  
iv) **Use of property tables is allowed.**

1. a) Plot, isentropic, isenthalpic, isobaric, isothermal, isochoric processes on T-S, H-S, P-V, P-H charts. **8**
- b) Prove :  
COP of Heat pump = COP of refrigerator+1. **5**
- c) Two black discs each of diameter 50 cm are placed parallel to each other concentrically at a distance of one meter. The discs are maintained at 1000K and 500K respectively. Calculate the heat flow between the discs.
- i) when no other surface is present
- ii) when discs are connected by a cylindrical black no flux surface. **7**
2. a) The feed water heater for a steam boiler is a shell and tube heat exchanger in which the raw feed water flowing through the tubes is heated by condensing steam on the shell side. The water flow rate is 9000Kg/hr and it is heated from 16°C to 60°C. The steam is at 1.03 bar (saturation temperature 107°C). Calculate surface area of the heat exchanger if the overall heat transfer coefficient is 2150W/m<sup>2</sup>K. **8**
- b) Explain mass transfer by phase change process. **4**
- c) Perform dimensional analysis for forced convection to establish the empirical correlation in the form of different dimensionless numbers and explain significance Prandtl number. **8**



3. a) Define and explain :
- i) adiabatic flame temperature
  - ii) heat of reaction
  - iii) enthalpy of formation. 6
- b) Given the velocity field
- $$V = 10x^2y\mathbf{i} + 15xy\mathbf{j} + (25t - 3xy)\mathbf{k}$$
- Find the acceleration of a fluid particle at a point (1, 2, -1) at time  $t = 0.5$ . 8
- c) Explain Hagen Poiseuille flow. From continuity equation derive discharge through pipe for Hagen Poiseuille flow. 6
4. a) Plot thermal, hydrodynamic and concentration boundary layer and explain significant dimensionless numbers pertaining to these boundary layer. 6
- b) Write a short note on greenhouse effect, Ozone depletion potential and international protocols related to environmental protection. 6
- c) In an air refrigeration system working on reversed Brayton cycle, the temperature of air at entrance to compressor (pressure ratio = 4, efficiency = 0.8) is 275K and the inlet pressure is 1 bar. The pressure loss in the cooler is 0.1 bar and in the cold chamber is 0.08 bar. The temperature of air at turbine (efficiency = 0.85) inlet is 310K. Estimate the pressure ratio for the turbine and the COP of the cycle. 8
5. a) A francis turbine has a wheel diameter of 1.2m at the entrance and 0.6m at the exit. The blade angle at the entrance is  $90^\circ$  and the guide vane angle is  $15^\circ$ . The water at the exit leaves the blades without any tangential velocity. The available head is 30 m and the radial component of flow velocity is constant. What would be the speed of wheel in rpm and blade angle at exit ? Neglect friction. 8
- b) Write a note on Net positive suction head of pump and how it is estimated. 6
- c) Explain thermal aspects of design of cooling tower. State different examples in which evaporative cooling is significant. 6
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## Ph.D. Course Work Examination, 2016

## MECHANICAL ENGINEERING

## Paper III (New) and Paper IV (Old)

## A) Advanced Development in Industrial and Production Engineering

Day and Date : Friday, 12-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

- 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.*

1. a) The following table shows actual demand data for the final 9 months of 2007 along with forecasts that were made by double exponential smoothing ( $\alpha = 0.2$  and  $\beta = 0.3$ ). In addition to displaying the forecasts, the table also displays the base and trend estimates.

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
Forecast	119.74	121.86	122.11	123.98	119.78	123.75	124.30	129.95	128.63
Base	118.79	119.69	121.69	118.98	122.22	123.00	127.64	127.16	
Trend	3.07	2.42	2.29	0.80	1.53	1.30	2.30	1.47	

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. Assuming the demand turns out to be 155 in January 2008, make new forecasts for February and March 2008.

10



- b) Solve **any two** of the following : **10**
  - i) What is importance of operation research in industries ?
  - ii) Discuss the various operation research models.
  - iii) Explain factors affecting on demand forecast.
  
- 2. a) Define technology forecasting. Write its significance. **10**
- b) Write short note on **any two** : **10**
  - i) Casual modeling using linear regression.
  - ii) Forecasting seasonality.
  - iii) Application of production layout.
  
- 3. a) Bob Dresser operates a major appliance warranty service center. His operation has two check stations that are required at the end of every repair task performed by his appliance repair staff. These are the Functionality Review (FR) and the Overall Scan (OS). The FR must be performed successfully before the OS is begun. On Friday morning, six repair jobs are completed, awaiting these two inspection activities. Processing times are given in minutes.

Job	FR	OS
A	50	30
B	35	55
C	25	20
D	20	35
E	15	10
F	10	25

- a) What is the optimal sequence of jobs for the objective of minimizing the makespan ?
- b) Show your work, and document the sequence.
- c) Chart the solution to this problem.
- d) What jobs are being processed at time period 90 ?
- e) What is the makespan of this problem ? **10**

<b>FR</b>										
<b>OS</b>										
	20	40	60	80	100	120	140	160	180	200



- b) Solve **any two** : 10
  - i) Write note on lean manufacturing.
  - ii) Basic component of lean production.
  - iii) Application of Inventory Control System.
  
- 4. a) Explain in detail how KANBAN technique is applied to production. 10
- b) Write short note on **any two** : 10
  - i) Explain the types of Optimization Techniques (any two).
  - ii) Role of cellular layouts in production.
  - iii) Information technology in any manufacturing industry.
  
- 5. a) Lockport Marine Services, Inc. wishes to assign a set of jobs to a set of machines. The following table provides data on the cost of production of each job when performed on a specific machine. 10
  - a) Determine the set of assignments that maximizes production value.
  - b) What is the total production value of your assignments ?

Machine				
Job	A	B	C	D
1	27	29	28	30
2	30	29	27	26
3	31	25	29	26
4	29	31	25	28

- b) Solve **any two** : 10
    - i) Load profile.
    - ii) Significance of Gantt chart.
    - iii) Inflation in India.
-





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**Ph.D. Course Work Examination, 2016**  
**BIOTECHNOLOGY (Paper – II)**  
**Recent Trends in Biotechnology**

Day and Date : Wednesday, 10-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

1. A) Define Bioethics. Add a note on Biosafety guidelines. 10  
B) Attempt **any two** of the following : 10
    - i) Explain HPLC.
    - ii) Write a note on Nucleic acid databases.
    - iii) Add a note on IR spectroscopy.
  2. A) Explain bioinformatics and write the detailed application of bioinformatics in various fields. 10  
B) Attempt **any two** of the following : 10
    - i) Explain on synthesis of nanoparticles.
    - ii) Write a note on SDS PAGE.
    - iii) Explain NCBI.
  3. A) What is Chromatography ? Briefly explain the ion exchange and gas chromatography. 10  
B) Attempt **any two** of the following : 10
    - i) Explain ultra centrifugation.
    - ii) Write a note on applications of biosensor in Food technology.
    - iii) Add a note on characterization of nanoparticles by TEM.
  4. A) Explain on concept, principles and types of biosensors. 10  
B) Attempt **any two** of the following : 10
    - i) Explain institutional biosafety committee.
    - ii) Write a note on array biosensors.
    - iii) Explain cDNA library.
  5. A) Explain PCR and explain in detail about real time PCR with its applications. 10  
B) Attempt **any two** of the following : 10
    - i) Explain on recombinant DNA technology.
    - ii) Write on gene cloning and expression.
    - iii) Explain DNA sequencing.
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**Ph.D. Course Work Examination, 2016**  
**BIOTECHNOLOGY**  
**Paper – III : Advanced Development in Biotechnology**  
**A) Animal Biotechnology**

Day and Date : Thursday, 11-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

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

1. A) Describe in detail constructions and use of CO<sub>2</sub> incubator and laminar air flow. **10**  
B) Write a short note on **(any two)** : **10**
  - i) Primary culture
  - ii) Application of In Vitro Fertilization
  - iii) FACS.
  
2. A) Define cell cloning. Describe in detail suspension cloning. **10**  
B) Explain **(any two)** : **10**
  - i) Balanced Salt Solution
  - ii) Bioreactors in animal cell culture
  - iii) Minimum Essential media.
  
3. A) What is transgene ? Explain in detail production of transgenic animal. **10**  
B) Give a brief account on **(any two)** : **10**
  - i) Monoclonal antibodies
  - ii) Importance of cell synchronization in cell cycle
  - iii) Measurement of viability of cells.



4. A) Discuss in detail different types of cryopreservation techniques. **10**
- B) Write a short note on (**any two**) : **10**
- i) Haematopoietic stem cells
  - ii) Flow cytometry
  - iii) Cell culture based vaccines.
5. A) What is Vermitechnology ? Describe in detail Methods of Vermicomposting. **10**
- B) Describe in brief (**any two**) : **10**
- i) Role of earthworms in biomagnifications of nutrients
  - ii) Nutritive value of vermicompost
  - iii) Cryopreservation of gametes.
-



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**Ph.D. Course Work Examination, 2016**  
**BIOTECHNOLOGY**  
**Advanced Development in Biotechnology**  
**Paper – III : B) Plant Biotechnology**

Day and Date : Thursday, 11-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

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

1. A) Describe the aseptic techniques and sterilization of media. 10  
B) Write on **any two** : 10
  - i) Optimization of yield.
  - ii) Meristem culture.
  - iii) Media preparation.
2. A) Write an account on the Cellular totipotency. 10  
B) Explain **any two** : 10
  - i) Nutritional requirements of explant.
  - ii) Genetic variations.
  - iii) Totipotency.
3. A) Discuss the principle and procedure involved in organogenesis. 10  
B) Write notes on **any two** : 10
  - i) Mechanical isolation of protoplast culture.
  - ii) Types of secondary metabolites.
  - iii) Different pathways of micropropagation.

P.T.O.



4. A) Explain the Production of Secondary Metabolites. **10**
- B) Describe in brief on **any two** : **10**
- i) Factors affecting Embryogenesis.
  - ii) History of plant tissue culture.
  - iii) Stages of Micropropagation.
5. A) Give an account on the Organ Culture Technique. **10**
- B) Write in brief on **any two** : **10**
- i) General and aseptic laboratory.
  - ii) Systems of culture.
  - iii) Enzymatic isolation of protoplast culture.
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**Ph.D. Course Work Examination, 2016**  
**URDU (Paper – III) (Old)**  
**Modern Topics in Urdu**

Day and Date : Thursday, 11-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

ہدایات : (۱) تمام سوالات کے جواب مطلوب ہیں۔  
(۲) تمام سوالات کے نشانات محاذی درج ہیں۔

- ۱۰ الف) "بالِ جبریل" کے حوالے سے علامہ اقبال کی نظم نگاری کا جائزہ لیجئے۔
- ۱۰ ب) صرف دو پر اختصاریہ تحریر کیجئے :
- (۱) علامہ اقبال کے فلسفہ خودی کی وضاحت کیجئے۔  
(۲) نظم "ہمالیہ کی چاندی" کا تجزیہ تحریر کیجئے۔  
(۳) نظم "پڑوسن" کا مرکزی خیال لکھئے۔
- ۱۰ الف) اردو نظم میں جاں نثار اختر کا مرتبہ متعین کیجئے۔
- ۱۰ ب) صرف دو پر اختصاریہ تحریر کیجئے :
- (۱) "شعاعِ امید" پر اظہار خیال کیجئے۔  
(۲) شعری مجموعہ "خاکِ دل" کی نظموں پر اظہار خیال کیجئے۔  
(۳) مولانا آزاد کی مضمون نگاری۔

P.T.O.



- ۱۰ ۳. الف) سلیمان خطیب کی اخلاقی و اصلاحی شاعری کا تنقیدی جائزہ پیش کیجئے۔
- ۱۰ ب) صرف دو پر اختصاریہ تحریر کیجئے :
- ۱) خاکہ " نام دیو مالی " پر اپنے خیالات کا اظہار کیجئے۔
- ۲) شعری مجموعہ " پچھلی پہر " پر اظہار خیال کیجئے۔
- ۳) " غبارِ خاطر " کا تنقیدی جائزہ لیجئے۔
- ۱۰ ۴. الف) بابائے اردو مولوی عبد الحق کی مقدمہ نگاری کا تجزیاتی مطالعہ تحریر کیجئے۔
- ۱۰ ب) صرف دو پر اختصاریہ تحریر کیجئے :
- ۱) نظم " ذوق و شوق " کے فنی محاسن بیان کیجئے۔
- ۲) خاکہ " نور خاں " کا خلاصہ تحریر کیجئے۔
- ۳) مولوی عبد الحق بہ حیثیتِ مُتَّق۔
- ۱۰ ۵. الف) مولانا آزاد کی سوانح قلم بند کیجئے۔
- ۱۰ ب) صرف دو پر اختصاریہ تحریر کیجئے :
- ۱) الہلال کی قومی خدمات پر اظہار خیال کیجئے۔
- ۲) عبد الحق کی خاکہ نگاری۔
- ۳) مولانا آزاد کی صحافت۔



**SLR-BP – 210**

<b>Seat No.</b>	
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**Ph.D. Course Work Examination, 2016  
COMPUTER SCIENCE  
Paper – II (New)/Paper – III (Old)  
Modern Topics in Computer Science**

Day and Date : Thursday, 11-8-2016  
Time : 3.00 p.m. to 6.00 p.m.

Total Marks : 100

1. Solve the following : **10**
  - A) Explain difference between Supervised and Unsupervised learning.
  - B) Attempt the following **(any two)** : **10**
    - i) Write a note on Adaptive Networks.
    - ii) Explain Covariance and Correlation.
    - iii) What are the benefits to have smallest number of neurons in the network ?
  
2. Attempt the following : **10**
  - A) What are Fuzzy sets ? List the Fuzzy set operations.
  - B) Attempt the following **(any two)** : **10**
    - i) What are fuzzy relations ? List the operations on fuzzy relations.
    - ii) Differentiate fuzzification and defuzzification. List the defuzzification methods.
    - iii) List two applications of fuzzy logic control system with suitable example.
  
3. Attempt the following : **10**
  - A) Consider three different raster systems with resolutions of  $640 \times 480$ ,  $1280 \times 1024$  and  $2560 \times 2048$ .
    - i) What size is frame buffer (in bytes) for each of these systems to store 12 bits per pixel ?
    - ii) How much storage (in bytes) is required for each system if 24 bits per pixel are to be stored ?

P.T.O.





- B) Attempt the following (**any two**) : **10**
- i) Explain the merits and demerits of DVST.
  - ii) Consider a raster system with the resolution of  $1024 \times 768$  pixels and the color palette calls for 65,536 colors. What is the minimum amount of video RAM that the computer must have to support the above-mentioned resolution and number of colors ?
  - iii) Explain the merits and demerits of Plasma panel display.
4. Attempt the following : **10**
- A) What is “Growth of a function” ? Explain three complexities with necessary diagrams.
- B) Attempt the following (**any two**) : **10**
- i) Explain greedy algorithm with a suitable example.
  - ii) Write and explain Floyd-Warshall algorithm with illustration.
  - iii) Compare 0/1 knapsack to general knapsack with an illustration.
5. Attempt the following : **10**
- A) Discuss briefly key challenges that one needs to address in the design and development of distributed applications.
- B) Attempt the following (**any two**) : **10**
- i) Discuss peer-to-peer architectural model for construction of distributed systems.
  - ii) Discuss difference between TCP/IP and UDP protocols for socket-based communication.
  - iii) Compare flow control and congestion control.
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SLR-BP – 211

Seat No.	
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**Ph.D. Course Work Examination, 2016**  
**ECONOMICS**  
**Paper – III : Modern Theories in Economics (Old)**

Day and Date : Thursday, 11-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

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

1. A) Discuss Capital controversy in detail. 10  
B) Write short notes on **any two** of the following : 10  
    i) Flexible exchange rates.  
    ii) Oligopoly.  
    iii) Sterilization.
2. A) Examine Chamberlin's approach to group equilibrium. 10  
B) Write short notes on **any two** of the following : 10  
    i) Cartels  
    ii) Product differentiation  
    iii) Golden rule of accumulation.
3. A) Discuss in detail Duopoly model of Cournot. 10  
B) Write short notes on **any two** of the following : 10  
    i) Foreign trade multiplier  
    ii) Balance of payments  
    iii) Kinked demand curve.

P.T.O.



4. A) Discuss the instruments of monetary and fiscal policy. **10**
- B) Write short notes on **any two** of the following : **10**
- i) Workable competition.
  - ii) Mrs. Robinson's contribution to imperfect competition.
  - iii) Baumol's sales maximization model.
5. A) Discuss the monetary approach to balance of payments. **10**
- B) Write short notes on **any two** of the following : **10**
- i) Equilibrium of the firm.
  - ii) Capital mobility.
  - iii) Optimal savings.
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SLR-BP – IC

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Ph.D. Course Work Examination, 2016  
MARATHI (Paper – I)

Research Methodology and Information Communication Technology (ICT)

अभ्यासपत्रिका क्र : १ : संशोधन पद्धती व माहिती-तंत्रज्ञान

Day and Date : Tuesday, 9-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

१. अ) 'संशोधन' ही संकल्पना स्पष्ट करून साहित्य संशोधनाच्या पद्धतीचा परामर्श घ्या. १०
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा : १०
- १) साहित्य संशोधनातील समकालीनतेचे महत्त्व सांगा.
- २) अनुवादीत साहित्य संशोधनातील भाषाभ्यासाचे महत्त्व स्पष्ट करा.
- ३) संशोधनाची उद्दिष्टे सांगा.
२. अ) साहित्य संशोधन व साहित्य समीक्षा यांचा परस्पर संबंध स्पष्ट करा. १०
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा : १०
- १) वर्णनात्मक संशोधन पद्धतीचे स्वरूप स्पष्ट करा.
- २) तुलनात्मक संशोधन पद्धतीची उपयुक्तता स्पष्ट करा.
- ३) संशोधनातील वाङ्मयीन मूल्यमापनाचे महत्त्व स्पष्ट करा.
३. अ) विशिष्ट कालखंडाच्या अनुषंगाने होणाऱ्या साहित्य संशोधनाची व्याप्ती व महत्त्व स्पष्ट करा. १०
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा : १०
- १) विशिष्ट साहित्यकृतीच्या संशोधनाचे महत्त्व व मर्यादा सांगा.
- २) लोकसाहित्य संशोधनातील अडचणी.
- ३) तौलनिक साहित्य संशोधनाचे स्वरूप सांगा.

P.T.O.



४. अ) संशोधन करतांना संशोधकाने पाळावळाची पथ्ये विशद करा. १०
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा : १०
- १) संशोधनातील संदर्भसूचीचे महत्त्व सांगा.
  - २) उपयुक्त परिशिष्टांचा परिचय घ्या.
  - ३) प्रबंधातील पूर्वाभ्यासाच्या संदर्भाचे महत्त्व सांगा.
५. अ) नवीन माहिती तंत्रज्ञानामुळे साहित्य संशोधनात झालेले बदल स्पष्ट करा. १०
- ब) खालील तीन प्रश्नांपैकी कोणत्याही दोन प्रश्नांची थोडक्यात उत्तरे लिहा : १०
- १) ई-बुक, ई-जर्नल म्हणजे काय ?
  - २) सर्च इंजिनांची उपयुक्तता स्पष्ट करा.
  - ३) संगणक व संशोधनाच्या सादरीकरणातील सुलभता यांचा अनुबंध स्पष्ट करा.

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SLR-BP – IIC

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**Ph.D. (English/Kannada/Urdu) Course Work Examination, 2016  
RESEARCH METHODOLOGY AND INFORMATION COMMUNICATION  
TECHNOLOGY (ICT) (Paper – I)**

Day and Date : Tuesday, 9-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. A) Explain the differences between the literary research, scientific research and social research. 10  
B) Answer **any two** : 10
  - i) Nature of Literary Research
  - ii) Practical review
  - iii) Research concepts.
2. A) Explain the methods of descriptive-historical and analytical research. 10  
B) Answer **any two** : 10
  - i) Experimental research
  - ii) Problemetisation
  - iii) Field work.
3. A) Discuss the nature and method of research in dialect. 10  
B) Answer **any two** : 10
  - i) Scientific study of languages
  - ii) Descriptive linguistics
  - iii) Methods in Language study.

P.T.O.



4. A) Explain the different stages in thesis writing. **10**
- B) Answer **any two** : **10**
- i) Specific Period
  - ii) Areas of research
  - iii) Planning in research.
5. A) What is the role of ICT in research ? **10**
- B) Answer **any two** : **10**
- i) Power Point presentation
  - ii) Classification
  - iii) Review of literature.
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SLR-BP – IIIC

Seat No.	
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Ph.D. Course Work Examination, 2016

HINDI (Paper – I)

Research Methodology and Information Communication Technology (ICT)

अनुसंधान प्रक्रिया, जानकारी और तकनीकी

Day and Date : Tuesday, 9-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

**सूचनाएँ :** 1) सभी प्रश्न अनिवार्य हैं।  
2) दाईं ओर प्रश्न के पूर्णांक हैं।

1. अ) अनुसंधान की प्राक्कल्पना (हायपोथिसिस) को स्पष्ट कीजिए । 10
- ब) किन्हीं दो के संक्षिप्त उत्तर लिखिए । 10
- i) भाषा विषयक अनुसंधान का स्वरूप ।
- ii) सामाजिक अनुसंधान ।
- iii) विषय चयन ।
2. अ) साहित्य के समाजशास्त्रीय अनुसंधान की चर्चा कीजिए । 10
- ब) किन्हीं दो के संक्षिप्त उत्तर लिखिए । 10
- i) अनुसंधान महत्व और व्याप्ति ।
- ii) अनुसंधान के मूलतत्व ।
- iii) साहित्य संकलन ।

P.T.O.





3. अ) साहित्यिक अनुसंधान में ऐतिहासिक तथ्यों और पद्धतियों का उपयोग स्पष्ट कीजिए। 10
- ब) किन्हीं दो के संक्षिप्त उत्तर लिखिए। 10
- i) अनुसंधान का स्वरूप।
  - ii) अनुसंधान में उपसंहार।
  - iii) विधा विशेष का अनुसंधान।
4. अ) प्रबंध लेखन में अध्याय विभाजन तथा शीर्षक रचना पर प्रकाश डालिए। 10
- ब) किन्हीं दो के संक्षिप्त उत्तर लिखिए। 10
- i) कृति-विशेष अनुसंधान।
  - ii) विषयसूची, सहायक ग्रंथ सूची।
  - iii) समाजशास्त्रीय शोध, स्वरूप और विश्लेषण स्पष्ट कीजिए।
5. अ) तुलनात्मक अनुसंधान के स्वरूप को स्पष्ट कीजिए। 10
- ब) किन्हीं दो के संक्षिप्त उत्तर लिखिए। 10
- i) अनुसंधान में संगणक का महत्व।
  - ii) शोधकार्य का विभाजन, अध्याय शीर्षक, उपशीर्षक।
  - iii) इंटरनेट, पॉवर पाईट।
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**Ph.D. Course Work Examination, 2016**  
**SCIENCE**  
**Paper No. – I : Research Methodology and Information**  
**Communication Technology (ICT)**

Day and Date : Tuesday, 9-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

***Instruction : Answer all questions.***

1. A) Discuss the block schematic of scientific approach with inductive and deductive logic schemes. **10**  
B) Answer **any two** : **10**
  - i) Write a notes on scientific explanation.
  - ii) Discuss the dynamic theory of construction.
  - iii) Give the applications of computer in research work.
2. A) What are different types of research ? Give the criteria for good research. **10**  
B) Answer **any two** : **10**
  - i) Write a note on literature survey.
  - ii) Discuss about the research design.
  - iii) Write a note on listing of journals.
3. A) Explain the planning of experiments and record keeping. **10**  
B) Answer **any two** : **10**
  - i) Write a note on results and discussion.
  - ii) Discuss about filing a patent.
  - iii) Discuss various search engines available on internet.
4. A) What is impact factor ? How it is calculated ? Give the advantages and limitations of impact factor. **10**



B) Answer **any two** : **10**

- i) Write a note on ISBN.
- ii) What is h-index ? Give its advantages and drawbacks.
- iii) Write a note on SCOPUS.

5. A) What are different types of data ? Explain various methods of data collection. **10**

B) Answer **any two** : **10**

- i) What is hypothesis ? Give the procedure for hypothesis testing.
  - ii) Write a note on ANOVA.
  - iii) Explain briefly about e-data base.
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SLR-BP – XX C

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Ph.D. Course Work Examination, 2016

SOCIAL SCIENCE

Paper – 1 : (Compulsory)

Research Methodology and Information Communication Technology (ICT)

Day and Date : Tuesday, 9-8-2016

Max. Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

**Instructions:** 1) Attempt **all** questions.

2) Figures to the **right** indicate **full** marks.

1. A) Explain various types of research. 10  
B) Give answers in short (**any two**) : 10
  - 1) Scope of research.
  - 2) Inductive research.
  - 3) Qualitative research.
2. A) Comment on research design. 10  
B) Give answers in short (**any two**) : 10
  - 1) Problem formulation.
  - 2) Analysis of an article.
  - 3) Exploratory research.
3. A) Explain the characteristics of qualitative data. 10  
B) Give answers in short (**any two**) : 10
  - 1) Hypothesis.
  - 2) Data presentation.
  - 3) Chi-square test.

P.T.O.



4. A) Write a detailed note on use of SPSS. **10**
- B) Give answers in short (**any two**) : **10**
- 1) Regression.
  - 2) Scopus.
  - 3) GIS and GPS.
5. A) Elaborate the use of computer application in research. **10**
- B) Give answers in short (**any two**) : **10**
- 1) E-review.
  - 2) Online publication.
  - 3) ICT.
-



SLR-BP – XXXI C

Seat No.	
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**M.Phil/Ph.D. Course Work Examination, 2016**  
**EDUCATION (Paper – I)**  
**Research Methodology and Information Communication Technology**  
**(ICT)**

Day and Date : Tuesday, 9-8-2016

Total Marks : 100

Time : 11.00 a.m. to 2.00 p.m.

**Instructions :** 1) Attempt **all** the questions.

2) Figures to the **right** indicate **full** marks.

1. A) What is 'Scientific Research Method' ? What is the importance of 'Rationale' in the research ? Explain. 15
- B) Write short notes on **any two** : 10
- 1) Types of research
  - 2) Review of related literature
  - 3) Nature of research procedure.
2. A) Differentiate between Qualitative and Quantitative research methodology with suitable examples. 15
- B) Write short notes on **any two** : 10
- 1) Triangulation
  - 2) Research design of qualitative research
  - 3) Sampling.

P.T.O.



3. A) What are the various statistical tools of research ? What are its uses ? What is the importance of statistical tools for finding of research problem ? **15**
- B) Write short notes on **any two** : **10**
- 1) Factor analysis
  - 2) Validity and research tool
  - 3) Linear regression
4. A) What is the concept of e-book ? State its importance and need in advance research methodology. What are the sources of e-book ? **15**
- B) Write short notes on **any two** : **10**
- 1) Use of ICT for presentation of research
  - 2) Impact factor
  - 3) Importance of APA style in research.
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SLR-BP – XXXIV C

Seat No.	
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Ph.D. Course Work Examination, 2016  
COMMERCE

Paper – I : Research Methodology and Information Communication  
Technology (ICT)

Day and Date : Tuesday, 9-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Max. Marks : 100

**N.B. :** i) Attempt **all** questions.  
ii) **All** questions carry **equal** marks.

1. a) What is research ? Explain in detail the process of research. 10
- b) Answer the following (**any two**) : 10
  - i) What is secondary data ?
  - ii) What is Regression ?
  - iii) Impact factor.
2. a) Explain in detail the classification , Tabulation and Approximation. 10
- b) Answer the following (**any two**) : 10
  - i) Information processing cycle
  - ii) Primary data
  - iii) Searching information from the internet.
3. a) What is research design ? State its process. 10
- b) Write notes on **any two** : 10
  - i) What is skewness ?
  - ii) Analysis of variance
  - iii) Multivariate analysis.

P.T.O.





4. a) Explain in detail the use of internet in research. **10**
- b) Write notes on **(any two)** : **10**
- i) Management control of I.T.
  - ii) Word Processing Package
  - iii) Formatting and editing information.
5. a) What is report writing ? Give the formats of report writing. **10**
- b) Write notes on **any two** : **10**
- i) Tabulation
  - ii) Hypothesis
  - iii) Non Parametric tests.
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**Ph.D. Course Work Examination, 2016  
ENGINEERING (Paper – I)  
Research Methodology and Information  
Communication Technology (ICT)**

Day and Date : Tuesday, 9-8-2016  
Time : 11.00 a.m. to 2.00 p.m.

Total Marks : 100

1. a) Explain Clearly : 10
- a) Descriptive and Analytical research
  - b) Quantitative and Qualitative research
  - c) Applied and Fundamental research
  - d) Conceptual and Empirical research.
- b) Explain **any two** questions from the following : 10
- 1) Explain following techniques defining a problem :
    - i) Understanding the nature of the problem
    - ii) Surveying the available literature.
  - 2) Explain the points to be observed selecting the research problem.
  - 3) Explain the following :
    - a) Formulating the research problem
    - b) Extensive literature survey.
2. a) In a random selection of 64 of the 2400 intersections in a small city, the mean number of scooter accidents per year was 3.2 and the sample standard deviation was 0.8. 10
- 1) Make an estimate of the standard deviation of the population from the sample standard deviation.
  - 2) Work out the standard error of mean for this finite population.
  - 3) If the desired confidence level is .90, what will be the upper and lower limits of the confidence interval for the mean number of accidents per intersection per year ?



- b) Explain **any two** questions from the following : 10
- 1) Explain the following :
    - a) Deliberate sampling
    - b) Simple random sampling
    - c) Cluster sampling and area sampling.
  - 2) Explain any two formal experimental designs.
  - 3) Explain sources of error in measurements.
3. a) Explain briefly the method of data collection through questionnaires. 10
- b) Explain **any two** questions from the following : 10
- 1) Explain the basic principles of experimental designs.
  - 2) Explain clearly :
    - a) Analysis of data
    - b) Hypothesis-testing.
  - 3) Explain the classification of mathematical models, explain use of partial differential equations.
4. a) Explain analysis of variance technique in case of Latin-square design with examples. 10
- b) Explain **any two** questions from the following : 10
- 1) Simple Regression Analysis and Multiple Regression Analysis.
  - 2) Describe briefly the technique of Analysis of Variance for one way classification.
  - 3) Explain Observation method for data collection.
5. a) Explain briefly different steps in writing the thesis. 10
- b) Explain **any two** questions from the following : 10
- 1) Explain the types of thesis.
  - 2) Explain briefly the role of computer in research.
  - 3) Explain the objectives of sampling theory.
-