

Bachelor of Science

Examination : NOVEMBER - 2025

Day & Date	Semester	Subject Name	Duration	Code	Max. Marks
21.11.2025 Friday	IV Repeater	Physical Chemistry – II	02.30 p.m. to 05.00 p.m	402102	75

Instructions :
All Questions are compulsory.

Q.1 Attempt any Five of the following. 15

- a) Define following terms
 - i. Henry law
 - ii. Raoult's law
 - iii. Kohlrausch's Law.
- b) Define Phase, component and degree of freedom.
- c) Define Specific, equivalent and molar conductance.
- d) Define with example one component, two component and azeotropic system.
- e) Define with example Strong and weak electrolyte.
- g) Define and explain lower and upper consolute temperature.
- h) State and explain following terms
 - i. Congruent Melting Point
 - ii. Incongruent Melting Point
 - iii. Eutectic point.

Q.2 Attempt any Three of the following. 15

- a) Derive Henderson Hasselbalch Equation.
- b) Discuss in Brief Phenol-water system.
- c) Give the electro-chemical series and give its significance.
- d) Explain Hittorf Method with diagram.
- e) Discuss in brief note on Buffer solution.

Q.3 Attempt any Three of the following. 15

- a) Give the difference between reversible and irreversible cells.
- b) Discuss in brief one component system with suitable example.
- c) What is two component system explain eutectic Pb-Ag system.
- d) What is buffer and explain mechanism of Buffer Action.
- e) 0.5 normal solution of a salt placed between two platinum electrode, 30 cm apart and area cross-section 10.0 sq.cm has a resistance of 25 ohms. Calculate the equivalent conductance

Q.4 Attempt any Three of the following. 15

- a) Give the difference between electrolytic and galvanic cells.

- b) Derive and explain Nernst Equation.
- c) Give the electro-chemical series and its significance. d) Explain Conduction in metals and in electrolyte solutions.
- e) Explain Boundry Moving Method with neat labeled diagram.

Q.5 **Attempt any Three of the following.**

- a) Discuss conductometric titration and its application.
- b) Explain in brief Effect of impurity on consulate temperature.
- c) Explain variation of equivalent conductance with dilution.
- d) Explain Ostwald's dilution law and its limitations.
- e) The resistance of a 0.1 N solution of a salt is found to be 6.5×10 ohms. Calculate the equivalent conductance of solution [Given : cell constant = 1.15 cm^{-1}]

**** End ****

**Bachelor of Science
Examination April-2026**

Day & Date	Semester	Subject Name	Time	Code	Marks
Wednesday 08/04/2026	IV	Analytical Chemistry-II	11.00 a.m. To 01.00 p.m.	40132111	50

Instruction: All questions compulsory and all questions carry equal marks.

Q. 1 Attempt all MCQ of the followings: (05)

1. Quality Control is mainly concerned with:

- a) Production
- b) Testing
- c) Marketing
- d) Storage

2. Precision refers to:

- a) Closeness to true value
- b) Reproducibility of results
- c) Percentage error
- d) Deviation

3. Total hardness of water is due to:

- a) Na⁺ ions
- b) Ca²⁺ and Mg²⁺ ions
- c) K⁺ ions
- d) Cl⁻ ions

4. In chromatography, R_f value is:

- a) Distance travelled by solute
- b) Distance travelled by solvent
- c) Ratio of distance travelled by solute to solvent
- d) None of these

5. DMG is used for detection of:

- a) Fe^{2+}
- b) Ni^{2+}
- c) Pb^{2+}
- d) Cd^{2+}

Q. 2 Attempt any five of the following seven questions. (15)

- I. Define Quality Assurance, Quality Control, and explain their importance.
- II. Explain error, accuracy and precision with examples.
- III. Describe sampling techniques and importance of sampling.
- IV. Explain determination of dissolved oxygen (DO) in water.
- V. Describe analysis of total hardness of water.
- VI. Explain paper chromatography and determination of R_f value.
- VII. Describe sampling of gases (ambient and stack sampling)

Q. 3 Attempt any Three of the following; (15)

- I. Explain mean, median, standard deviation and relative average deviation.
- II. Describe analysis of total dissolved solids (TDS) and suspended solids (TSS).
- III. Explain separation of cations using paper chromatography.
- IV. Describe TLC technique for separation of dyes or amino acids.
- V. Explain solvent extraction of iodine from aqueous solution.

Q. 4 Attempt any Three of the following. (15)

- I. Explain separation of Ni^{2+} and Fe^{2+} using DMG and spectrophotometry.
- II. Describe determination of oil and grease in water.
- III. Explain sampling of liquids (homogeneous and heterogeneous)
- IV. Describe determination of pH of aerated drinks, fruit juices, soaps and shampoos.
- V. Explain size reduction methods and sampling of solids.

S.N.D.T. Women's University**Bachelor of Science Examination: April/May-2026**

Semester	Subject Name	Time	Code	Marks
IV	Inorganic Chemistry-II	2HRS	40132112	50

Instructions: All questions compulsory and all questions carry equal marks.

Q.1 Attempt all MCQ of the followings.**05 Marks**

- Alkali metals belong to which group of the periodic table?
 - Group 1
 - Group 2
 - Group 16
 - Group 17
- Which of the following metals shows flame coloration?
 - Na
 - Mg
 - Be
 - Al
- Gravimetric analysis is based on measurement of:
 - Volume
 - Mass
 - Temperature
 - Pressure
- Which of the following is a type of gravimetric method?
 - Precipitation method
 - Titration method
 - Colorimetric method
 - Chromatographic method
- Digestion of precipitate in gravimetric analysis helps in:
 - Increasing solubility
 - Improving purity of precipitate
 - Increasing acidity
 - Decreasing weight

15 Marks**Q.2. Attempt any five of the following.**

- I. Explain general characteristics of s-block elements.
- II. Describe electropositive character and reducing properties of alkali metals.
- III. Explain hydration of ions and lattice energy of alkali metals.
- IV. Describe flame coloration of alkali and alkaline earth metals.
- V. Define gravimetric analysis and explain its scope.
- VI. Explain types of gravimetric methods: precipitation method and volatilization method.
- VII. Write advantages and limitations of gravimetric analysis.

15 Marks**Q.3. Attempt any three of the following.**

- I. Describe atomic and ionic radii and ionization energies of s-block elements.
- II. Explain extraction of alkali and alkaline earth metals.
- III. Describe methods of precipitation in gravimetric analysis such as slow addition, stirring and digestion.
- IV. Explain co-precipitation and post-precipitation with causes.
- V. Describe the role of washing and drying of precipitates in gravimetric analysis.

Q.4. Attempt any three of the following.**15 Marks**

- I. Explain chemical properties of s-block elements with examples.
- II. Describe uses of alkali and alkaline earth metals.
- III. Write a note on complexes of alkali and alkaline earth metals.
- IV. Explain important compounds of alkali and alkaline earth metals and their applications.
- V. Explain the role of ignition of precipitates and methods to minimize co-precipitation.

Bachelor of Science
Examination April-2026

Day & Date	Semester	Subject Name	Time	Code	Marks
Monday 13/04/2026	IV	Organic Chemistry-II	11.00 a.m. To 01.00 p.m.	40132113	50

Instruction: All the questions are compulsory.

Q. 1 Attempt following All MCQ type questions. (06)

1) The name product in Aldol Condensation reaction?

- a) β -Hydroxy aldehyde b) β -Hydroxy Ester
c) β -Hydroxy alcohol d) β -Hydroxy anhydride

2) What kind of intermediate form in SN^1 reaction?

- a) Carboaction b) Carbanion
c) Carbene d) Radical

3) The name of intermediate in Aldol condensation reaction?

- a) Carbanion b) Carboaction
c) Radical d) Carbene

4) The halide ion is an extremely _____?

- a) Weak base b) Weak acid
c) Strong base d) Strong acid

5) When the nucleophile OR attacks the RX, the resultant product will be _____.

- a) R-OH b) ROR
c) RNHR d) R:CN

6) A low concentration of nucleophile favours the _____?

- a) SN^2 reaction b) SN^1 reaction
c) Both SN^1 and SN^2 reaction d) None of the mentioned.

Q. 2 Define the following terms (Attempt any Seven) (14)

- i) Define Substitution reaction and their types with example?
- ii) Define Nucleophile and Ambient nucleophile with example?
- iii) Explain regioselectivity and stereoselectivity with example?
- iv) Define Alcohol and their classification with example?
- v) Explain physical properties of aldehyde and ketone?
- vi) Define Dyes and their classification?
- vii) Define nucleophilicity and basicity with example?
- viii) Define polar and Non polar solvent with example
- ix) Define Elimination reaction and their types?
- x) What is E'CB reaction with example?

Q. 3 Short Answer Type Questions (Attempt Any Five) (15)

- i) Explain Substitution nucleophilic internal (S_Ni) reaction with example?
- ii) Explain the effect of solvent on nucleophilic Substitution reaction?
- iii) Explain intermediate in S_N1 and S_N2 reaction?
- iv) Define polymer and their classification?
- v) Explain the nature of leaving group in S_N1 reaction?

Q. 4 Short Answer Type Questions (Attempt Any Three) (15)

- i) Explain Perkin reaction with mechanism?
 - ii) Explain Benzoin condensation reaction with mechanism?
 - iii) Explain the difference between S_N1 and S_N2 reaction?
 - iv) Explain the difference between substitution and elimination reaction?
 - v) Define alkaloid, terenoids, and flavonoids with example?
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Bachelor of Science
Bachelor of Science in Home Science
Bachelor of Commerce (B.Com.)
Examination: April 2026

Day & Date	Semester	Subject Name	Time	Code	Max. Marks
Thursday 16/04/2026	IV	Geography of Manmade Disaster (GEO)	11.00 am To 1.00 pm	40410711	50

Instructions:

1) Write any Two questions form Q. No. 1 to 4

2) Question No. 5 is compulsory

Q.1. What is man-made disaster. Explain the man-made disaster caused due to Urbanization. **15**

Q.2. Explain the man-made disaster caused due to Industrialization. **15**

Q.3. Discuss the causes, effects and control measures for Road and Railway accidents. **15**

Q.4. What are the causes and effects of building fire and forest fire. **15**

Q.5. Write Short note on (any two) **20**

- a) Bhopal gas Tragedy
- b) Causes and effects of Air accidents
- c) Causes and effects of Sea accidents
- d) Man-Made Disaster caused due to Cultural factors

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Thursday 16/04/2026	IV	Geography of Manmade Disaster (GEO)	11.00 am To 1.00 pm	40410711	50

सूचना

१) प्रश्न क्र. १ ते ४ पैकी कोणतेही दोन प्रश्न सोडवा.

२) प्रश्न क्र. ५ सोडविणे आवश्यक आहे.

प्र.१. मानवनिर्मित आपत्ती म्हणजे काय? शहरीकरणामुळे निर्माण होणाऱ्या मानवनिर्मित आपत्तींचे स्पष्टीकरण द्या. १५

प्र.२. औद्योगिकीकरणामुळे निर्माण होणाऱ्या मानवनिर्मित आपत्तींचे स्पष्टीकरण द्या. १५

प्र.३. रस्ते आणि रेल्वे अपघातांची कारणे, परिणाम आणि नियंत्रण उपायांची चर्चा करा. १५

प्र.४. इमारतींना लागलेली आग आणि जंगलातील आगीची कारणे आणि परिणाम काय आहेत ते लिहा. १५

प्र.५. टीपा लिहा (कोणत्याही दोन) २०

अ) भोपाळ वायू दुर्घटना

ब) हवाई अपघातांची कारणे आणि परिणाम

क) सागरी अपघातांची कारणे आणि परिणाम

ड) सांस्कृतिक घटकांमुळे निर्माण झालेल्या मानवनिर्मित आपत्ती

Bachelor of Science
Examination: April 2026

Day & Date	Semester	Subject Name	Time	Code	Max. Marks
Saturday 18/04/2026	IV	Herbal Cosmetics	11.00 am to 1.00 pm	40732611	50

Instruction:

All question are compulsory.

All question carries equal mark.

Draw Illustrations wherever required.

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- Q.1.** Describe the raw materials used in waxes with their sources. **10**
- OR
- Describe the raw materials used as fixed oils with their sources. **10**
- Q.2** Describe the various raw material used as hair colorant. **10**
- OR
- Describe the antioxidants in details. **10**
- Q.3** Explain the Biological source and description of raw materials of natural origin like perfumes. **09**
- OR
- Explain the Freshening agent - Chandan, Khus. **09**
- Q.4.** Describe herbs used as antibacterial, antifungal, and other therapeutic properties used in cosmetic formulations. **09**
- OR
- Describe the role of specific herbs in herbal hair care products like oils, shampoos. **09**
- Q.5. Write a short note on (Any Three)** **12**
- Emollients Aloe, Almond.
 - Hair cleansing: Ritha, Shikakai
 - Astringent - Amla.
 - Bleaching agents.
 - Anti-dandruff: Tulsi, Neem, Lemon.

BACHELOR OF COMPUTER APPLICATIONS (BCA)**Examination: April 2026**

Day & Date	Semester	Subject Name	Time	Code	Max. Marks
Tuesday 21/04/2026	VI	Marathi Bhashecha parichay Bhag 2 (MARATHI)	11.00 a.m. To 01.00 p.m.	40810411	50

सूचना :- १. खालील पैकी सात प्रश्नांपैकी कोणतेही प्रश्न सोडवावे.

२. सर्व प्रश्नांना समान गुण आहेत.

प्र.क्र.१ पुढील उतारा शुद्धस्वरूपात योग्य त्या विरामचिन्हांचा वापर करून लिहा. (१०)

अस्वल राहतो कुठे कुसुमने विचारले वडील म्हणाले जंगलातील कडयाजळच्या
गुहेत काय खातो तीथे कंदमुळे फळे त्याला
मधमाशाचा मोह फार आवडतो त्याला मधमाशा चावत नाहीत
का चावतात तर पण त्ये अंग केसाळ असल्यामुळे त्याला
त्याची भिती वाटत नाही.

प्र.क्र.२ खालील पैकी कोणत्याही एका विषयावर निबंधलेखन करा.

१. पावसाळा -
२. मराठी मातृभाषेचे महत्त्व -

प्र.क्र.३ खालील उताऱ्याचे एक तृतीयांश ओळीत सारांशलेखन करा. (१०)

१. समजा, घरात आईने तयार केलेला चिवडा अतिशय खमंग झाला आहे. हा खमंग चिवडा चविष्ट का लागतो ?

याचे उत्तर आपल्याला असे देता येईल: या चिवडयासाठी वापरलेले पोहे पातळ आहेत. ते खुसखुशीतपणे तुपात तळले आहेत.

यात हळद, मीठ, तिखट हे योग्य पंमाणात पडले आहे. त्यात खोबऱ्याचे पातळ काप, बेदाणे, काजूगर, तीळ, व शेंगदाणे घातले आहेत.

व थोडा दाण्याचा कुटही मिसळला आहे. त्यावर लसणची खमंग फोडणी दिली आहे अन शेवटी चव येण्यासाठी चिमुटभर साखर पेरलेली आहे. म्हणून चिवडा चविष्ट झाला आहे. असे सांगणे हेच त्याचे रसग्रहण. हे जसे चिवडयाचे तसेच कवितेच्या रसग्रहणाचे असते.

कवितेचा खमंग पदार्थ तयार करताना त्यात कवीने कोणता मसाला घातला आहे, त्याला खमंगपणा का आला आहे स्पष्ट करून सांगणे

यालाच कवितेत रसग्रहण म्हणायचे.

प्र.क्र.४ खालिल पैकी कोणत्याही एका विषयावर सुमारे १५ ते २० ओळीत संवादलेखन करा. (१०)

१. भाजीविक्रेत्याशी संवाद
२. भ्रमणध्वनी (मोबाईल) वापराबाबत दोन मैत्रिणीमधील संवाद-

प्र.क्र.५ खालिल उतारा वाचून त्याखाली दिलेल्या प्रश्नांची उत्तरे तुमच्या शब्दात लिहा. (१०)

जातीने मनुष्य श्रेष्ठ किंवा कनिष्ठ ठरतो, का विचार सर्व संतांनी आणि विचारवंतांनी पुसून टाकण्याचा अखंड प्रयत्न केला आहे.

संतांचे विचार आणि आचार समतेचे द्योतक आहेत. ज्याच्या मनात समता नाही आणि ममताही नाही,

त्याला संतत्वाच्या व देवत्वाच्या जवळ जाण्याचा अधिकार कधीच लाभणार नाही. तोच खरा अस्पृश्य समजावा.

ही विशाल व सर्व समावेशक दृष्टी संतांच्या साहित्यातून प्रकट झाली आहे. 'भेदाभेद भ्रम अमंगळ' आणि जे जे भेटे भूत ते ते जाणीजे भगवंत हा उदात्त विचार तर्कशुद्ध आहे, आपल्या खांद्यावर जातीय उच्चनीचतेचे जे पिशाच्च

शतकानुशतके ठाण माडून बसले आहे, ते फेकून दिले पाहिजे, हे अनेक संतांनी गर्जून सांगितले आहे. संतांच्या कपाळावर

ज्याने जाती -वर्णाची लेवले तत्परतेने आणि धूर्तपणे चिटकवली. खरेतर साधूंचीच काय सर्वसामान्यांचीही जात माणमस असते, माणूसच असावी,

माणसांची जाती वाढावी . मानव्यांची उंची वाढत जावी; हे संतांचे स्वप्न आहे पण हे घडत नाही; म्हणून संतांच्या वाणीला अनेक हुंदके फुटलेले आहेत.

.....डॉ. निर्मलकुमार फडकुले

- १) संत- महंतानी कोणता प्रयत्न केला?
- २) संत- साहित्यातील उदात्त विचार कोणता ?
- ३) संतवाणीला अनेक हुंदके का फुटले?
- ४) उताऱ्यास योग्य शीर्षक द्या?
- ५) उताऱ्याचे लेखन कोणी केले आहे?