

Attainment of Course and Program Outcomes

1. Butterfly Month Photography Competition (1/09/2023)

Big Butterfly Month Photography Competition is organized by the department of Zoology to enhanceour students understanding of these delicate wonders of nature. By participating in butterfly walks, submitting observations, and engaging in various activities. To encourage students to explore the fascinating world of insects through photography and promote an appreciation for entomology.Participants sent photos of butterfly that they spot in their backyard.



2.Avishkar College Level Competition 2023-24(25/09/2023)

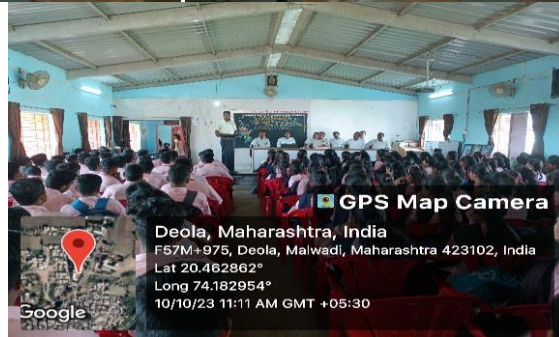
An "Avishkar" innovation competition was organized to promote research and innovation among college students. Dr Manoj Mahajan emphasized the need of such competitions to awaken the attitude of innovation among the students.30 students participated through 15 projects, Presented research concepts through posters.





3. Wallpaper Contest (10/10/2023)

Inaugural Function of Wallpaper Contest on Ahirani Songs, Poetry, Idioms and Phrases was organized by Department of English on the hands of Dr. Milind Ahire (Head, Department of English MGV ACS College, Manmad).



4. Fit India campaign wrestling competition(5/12/2023 to 10/12/2023)

Under Fit India campaign wrestling competition, Judo competition, Ball badminton boys and girl's competition, Boys and girls running competition and 5 km Walkathon was organized for staff and students.



5. Ramanujan Quiz Competition(22/12/2023) Ramanujan Quiz Competition was conducted to inculcate interest in Mathematics among students. Total 109 students from senior and junior college and 195 students of Jijamata Kanya Vidyalaya Deola of 8th, 9th and 10th class participated in the quiz competition.



6. Madhava Mathematics Competition (7/1/2024)

The Madhava Mathematics Competition organized in the memory of 12th century great Keralite Mathematician Madhava. Total 50 students participated in this competition .



7. Chem Fest 2024- (13/1/2024) Chem fest programme were organized by department of chemistry. In this programme student organize poster and model exhibition and participate in chem.-hunt, Chem -e-snap and chem. Quizz actively.



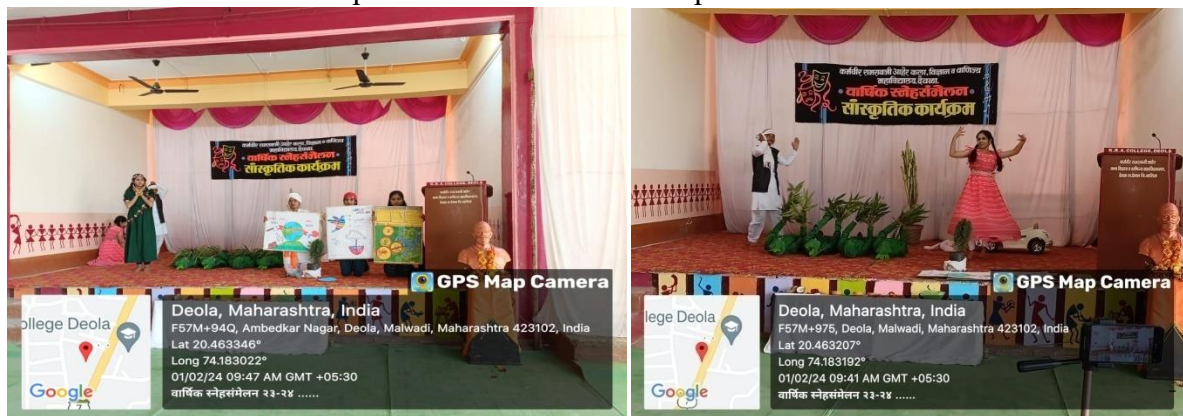
8. Participation in National youth festival (27 to 30/1/2024)

Two volunteers and one Program officer participated in National youth festival.



9. Environment Consciousness, Sustainable Measures and Green Practices (1/2/2024)

The students of T.Y. B.Sc. presented drama on “Save plant save earth”.



10. Industrial Visit of Commerce Department(10/02/2024) Department of Commerce and Economics was organized a study tour on **10 February 2024** at Sahakar Maharshi Bhausaheb Thorat Sahakari Suger industry, Rajhans Milk Sangamner, The mineral museum Sinner. Total 63 students were participated in the study tour



Examination Question Paper and Answer Sheet

<i>Jr.Sup.Sign.</i>	(SavitribaiPhule Pune University)	<i>Seat No.</i>			
	Internal Examination Oct. 2023				
Kar. Ramraoji Aher Arts, Science & Commerce College Deola (Nashik)					
Class: SYBSc	Semester: III	Time: 1:00 Hrs.			
		Total Marks: 10			
Subject: Inorganic & organic Chemistry		Sub.Code: CH-302			
Seat No.(In Words):					
<i>Q. No.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>Total</i>	<i>Sign. of the Examiner</i>
<i>Marks</i>					

Instructions: 1. All Questions are compulsory. 2. Figures to the right indicate full Marks.

Q.1. Write correct option in the box in front of question: (3)

- In which species, the bond length is more?
(A) O₂ (B) O₂⁻ (C) O₂²⁻ (D) O₂⁺
- Huckel's rule is related to.....
(A) Acidity (B) Basicity (C) Aromaticity (D) Unsaturation
- Ni(CO)₄ is an example of hybridisation.
(A) sp³ (B) dsp² (C) d²sp³ (D) sp³
- Picric acid is derivative of benzene.
(A) mono-substituted (B) di-substituted
(C) poly-substituted (D) none of these
- Hell-volhard-zelinsky reaction is used to synthesis of
(A) aldehydes (B) α-halo acids (C) acid halides (D) ketones
- Anthracene contains number of π electrons
(A) 6 (B) 10 (C) 14 (D) 2

Q.2.State true or false of the following: (3)

- Acetic acid form acetyl chloride on reaction with SOCl₂.
- Amides contain intermolecular H-bonding.
- Valeric acid is also known as pentanoic acid.
- Geometrical isomerism does not contain d and f form
- Square planar complexes have dsp² hybridisation.
- pn is the short form of 1,2 diaminopropane.

Q.3.Answer the questions: (4)

- Ligand isomerism
- Reaction of acetic acid
- Inner orbital complex
- Acid hydrolysis

<i>Jr.Sup.Sign.</i>	(SavitribaiPhule Pune University)	<i>Seat No.</i>			
	Mid-Term (Internal) Exam. March/April 2024				
Kar. Ramraoji Aher Arts, Science & Commerce College Deola (Nashik)					
Class: FYBSc	Semester: II	Time: 1:00 Hrs.			
		Total Marks: 10			
Subject: Analytical Chemistry		Sub.Code: CH-202			
Seat No.(In Words):					
<i>Q. No.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>Total</i>	<i>Sign. of the Examiner</i>
<i>Marks</i>					

Instructions: 1. All Questions are compulsory. 2. Figures to the right indicate full Marks.

Q.1. Write correct option in the box in front of question: (3)

- SI unit of temperature is.....
(A) K (B) °K (C) °C (D) Cal
- The component not associated with pH meter is.....
(A) Set buffer (B) Photovoltaic cell
(C) Temperature Probe (D) Slope Control Knob
- Which colour is observed for test of Nitrogen in sodium fusion test?
(A) Purple (B) White (C) Colourless (D) Green
- The term pH is defined as.....
(A) $-\log_{10}[\text{C}_a^{+}]$ (B) $\log[\text{H}^+]$ (C) $-\log_{10}[\text{H}^+]$ (D) $\log_{10}[\text{aH}^+]$
- Which one is the strongest electrolyte in the following?
(A) NaCl (B) CH₃COOH (C) NH₄OH (D) AgCl
- Which reagent is used to determine acid component?
(A) NaHCO₃ (B) Na₂HCO₃ (C) NaHCO₃ (D) NaH₂CO₃

Q.2.State true or false of the following: (3)

- Molar concentration of solute is called as molarity.
- Photovoltaic cell is not associated with pH meter.
- Green colour is observed for Nitrogen test in qualitative analysis.
- p functions are used to calculate power.
- Functional group of aldehyde contains Nitrogen.
- S.I unit of weight is Newton.

Q.3.Answer the questions: (Any Four) (4)

- Normality
- pH meter
- Chromatography
- Test for acid
- Qualitative analysis
- R_f

(Savitribai Phule Pune University)
Mid-Term (Internal) Exam, March/April 2024

Seat No. 1
90

Kar. Ramraoji Aher Arts, Science & Commerce College Deola (Nashik)

Class: TYBSc Semester: VI Time: 100 Hrs. Total Marks: 10

Subject: Physical Chemistry-III Sub.Code: CH-602

Q. No.	1	2	3	Total	Sign. of the Examiner
Marks	02	02	02	06/10	OK

Instructions: 1. All Questions are compulsory. 2. Figures to the right indicate full Marks.

Q.1. Write correct option in the box in front of question:

- Solution is
(A) mixture of two compounds (B) homogeneous mixture of two compounds
(C) solute and solvent (D) all of the above B
- A semipermeable solution allows passage of brought it
(A) solute only (B) solvent only (C) solute and solvent only (D) none of these B
- A solution is
(A) Mixture of two three compounds (B) homogeneous mixture different compounds
(C) mixture of two compounds (D) All the above B
- The depression in freezing point is directly proportional to the.....
(A) molarity (B) normality (C) boiling point (D) all of these A
- A aqueous solution of salt (NaCl) in water has vapour pressure
(A) more than water (B) equal to water (C) less than water (D) double than water C
- Von't Hoff equation of 'n' moles of solute dissolved in V liter of solution
(A) $\pi P = nRT$ (B) $\pi V = nRT$ (C) $\pi RT = n$ (D) $\pi P = nRT/V$ B

Q.2. State true or false of the following:

- In Kinetics of parabolic rate law surface area of metal plays a major role - True
- Electrolyte are substance that does not yields ions in solution - False
- In solid state reactions particle size, diffusion, phase transition, does not affect the rate of reactions - True
- Osmosis process, solution of a solute is separate by a semipermeable membrane - False
- The parabolic rate law, rate is proportional to the 1/X (X = thickness) - True
- polyethylene and nylon is a natural type of polymer - False

Q.3. Answer the questions:

- Osmosis and osmotic pressure
- coulomb's law
- degree of dissociation
- colligative properties
- Raoult's law

(Savitribai Phule Pune University)
Mid-Term (Internal) Exam, March/April 2024

Seat No. 1
83

Kar. Ramraoji Aher Arts, Science & Commerce College Deola (Nashik)

Class: TYBSc Semester: VI Time: 100 Hrs. Total Marks: 10

Subject: Physical Chemistry-II Sub.Code: CH-601

Q. No.	1	2	3	Total	Sign. of the Examiner
Marks	02	02	02	06/10	OK

Instructions: 1. All Questions are compulsory. 2. Figures to the right indicate full Marks.

Q.1. Write correct option in the box in front of question:

- A mixture of manganese dioxide and charcoal is used in.....
(A) dry cell (B) lithium ion battery (C) lead-acid battery (D) all of these A
- The cell which reduces greenhouse gas emission is.....
(A) fuel cell (B) dry cell (C) battery (D) primary cell A
- Bragg's equation is given by.....
(A) $n\lambda = 4d\sin\theta$ (B) $n\lambda = 2d\sin\theta$ (C) $\lambda = nd\sin\theta$ (D) $n\lambda = d^2\sin\theta$ B
- S. Unit of radioactivity is.....
(A) Curie (B) Becquerel (C) Hertz (D) Roentgen B
- The unit of binding energy.....
(A) erg (B) gram (C) MeV (D) Joule C
- NaCl is an example of which crystal system.....
(A) triclinic (B) monoclinic (C) cubic (D) tetragonal C

Q.2. State true or false of the following:

- Crystalline substances are anisotropic substances. = True
- Salt bridge is help to maintain the balance of charges. = False True
- The nuclei having different number of neutrons is called isotone. = True
- Quinhydrone is equimolar mixture of quinone and hydroquinone. = True
- Radioactive decay depends on temperature and pressure. = False
- Graphite is the example of hexagonal crystal system. = False

Q.3. Answer the questions:

- E.M.F. of cell
- redox potential
- Unit cell
- Battery
- half life period

Osmosis and osmotic pressure :-
Osmosis: The movement of the solvent molecules into the solution through a semipermeable membrane is called as osmosis.
Osmotic pressure: Osmotic pressure is the mechanical pressure which must be applied to prevent the movement of solvent molecules into the solution through semipermeable membrane.

Coulomb's law:- The force of attraction between two charged bodies is directly proportional to their product of their charges and inversely proportional to the square of the distance between them. The formula for Coulomb's law is:
$$E_{ij} = \frac{q_i q_j}{4\pi\epsilon_0 r_{ij}^2}$$

Degree of dissociation:- Degree of dissociation is the fraction of electrolyte which undergoes dissociation.

Colligative Properties:- Colligative properties are related to the solid substances.

Raoult's law:- The Raoult's law states that, The total vapour pressure of the solution is the sum of the partial vapour pressure of the volatile component of the solution.

Q.3] Answer the following :-

- Half-life period :-** The life required for the disintegration of 1 of the half original amount to the radioactive element is the as half-life period.
- Unit cell :-** The unit cell as the described the structure of the crystal is the do bonding energy the concrete conical cell of the lattice energy is called as the unit cell. simple & basic cell.
- E.M.F. of cell :-** The electromotive force is defined as the difference potential between the 2 electrodes at the highly potential to the electrode at lower potential is the tendency of chemical species either to reduce or to be oxidized by donating electrons.
- Redox potential :-** Redox potential is the as the tendency of the chemical species either to reduce or accepting or oxidation oxidized by donating electrons.
- Battery :-** Battery is the storage device that stores chemical energy that convert into electrical energy by electrochemical reaction. battery consists of group of the 2 or more electron electric cell conducted together electrochemical is called battery.

DEOLA EDUCATION SOCIETY'S
KARMAVEER RAMRAOJI AHER ARTS, SCIENCE & COMMERCE COLLEGE
 Deola
 Junior Supervisor Report [For A.Y. 2023-2024]

(Savitribai Phule Pune University)
Mid-Term (Internal) Exam. APRIL 2024

Kar. Ramraoji Aher Arts, Science & Commerce College Deola (Nashik)

Class: T.Y.B.Sc. Semester: VI Time: 1.00 Hrs. Total Marks: 10

Subject: Electronics II
 Sub.Code: PHY-365-A

Seat No. (In Words): one

Q. No.	1	2	3	4	Total	Sign. of the Examiner
Marks	3	3	4	-	10/10	<i>[Signature]</i>

Instructions: 1. All Questions are compulsory. 2. Figures to the right indicate full Marks.

Que:-1. Fill in the blanks.

- One of the most common material used for LED is GaAs.
- The approximate efficiency of class A amplifier is 25%.
- The resonant frequency of a tank circuit is given by $f = \frac{1}{2\pi\sqrt{LC}}$.

Que:-2. State whether the following statements are true or false.

- IC 555 consists of series of three 5KΩ resistors. True
- JFET is a three terminal bipolar device. false
- In fabrication of IC, usually high value of capacitances are connected externally. True

Que:-3. Solve the following examples.

- When a reverse gate voltage of 20 V is applied to a FET, the gate current is 10³ microampere. Find the resistance between gate and source.
- In class-C amplifier, if a parallel LC circuit consist of inductor of inductance 2 microhenry and capacitor of capacitance 470 picofarad, what will be the resonant frequency?
- Determine the frequency of oscillations for the astable multivibrator using IC 555. Given data is RA=RB=10 Kiloohm and C=0.01 microfarad.
- Find the duty cycle of astable multivibrator using IC 555 when RA=RB=R.

1. given,
 $V_{GS} = 20V$
 $I_G = 10^3 = 10^{-9}A$
 $R_{GS} = \frac{V_{GS}}{I_G} = \frac{20V}{10^{-9}A}$
 $= 2 \times 10^{10} \text{ ohm}$

2. given,
 $L = 2 \times 10^{-6}$
 $C = 470 = 470 \times 10^{-12}$
 $f_r = \frac{1}{2\pi\sqrt{LC}} = \frac{1}{2\pi\sqrt{2 \times 10^{-6} \times 470 \times 10^{-12}}}$
 $= \frac{1}{6.28 \times 30659419.43} = 5.19$
 $f_r = 5.19 \text{ MHz}$

3. given,
 $R_A = R_B = R = 10$
 $C = 0.01$
 $f_r = \frac{1.44}{(R_A + 2R_B)C} = \frac{1.44}{(10 \times 10^3 + 2 \times 10 \times 10^3) 0.01 \times 10^{-6}}$
 $= \frac{1.44}{(30 \times 10^3) 0.01 \times 10^{-6}}$
 $= \frac{1.44}{3 \times 10^{-4}}$
 $= 4.8 \times 10^{-5}$
 $= 480 \text{ Hz}$

4. (EL),
 $T_1 = 0.693 (R_A + R_B)C$
 $T_2 = 0.693 R_B C$
 $T = T_1 + T_2$
 $= 0.693 (R_A + R_B)C + 0.693 R_B C$
 $T = 0.693 (R_A + 2R_B)C$
 $D = \frac{T_1}{T} = \frac{0.693 (R_A + R_B)C}{0.693 (R_A + 2R_B)C}$
 $= \frac{0.693 (2R)C}{0.693 (3R)C}$
 $= 0.66 \text{ or } 66\%$


Principal
 Kar. Ramraoji Aher Arts, Sci. & Comm. College, Deola (Nashik)