KATHMANDU

DON BOSCO COLLEGE

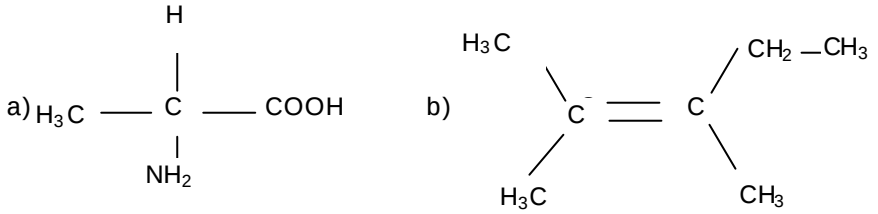
2ND Terminal Exam - 2059

Stream: Science **Time : 2 hrs.**
Class: XI **F. M. : 100**
Subject: Chemistry **P. M. : 40**

Attempt any ten questions: ***[4x10=40]***

Group 'A'

1. Calculate the oxidation state in underlined element in the followings:
   a. $K_2\underline{Mn}O_4$ b) $K_2\underline{Cr}_2O_7$ c) $\underline{Mn}O_2$ d) $Fe\underline{P}O_4$
2. Define oxidation and reduction in terms of electronic concept.
3. Write the electronic configuration of Fe^{+3} ion. Also calculate the number of unpaired electron.
4. Solid Nacl does not conduct electricity but its solution does why?
5. What are the four quantum numbers of 19^{th} electron on chromium.
6. Write the lewis structure of H_2SO_4 and NH_4^+.
7. Define the terms
   I. Minerals and ores.
   II. Alloy and amalgam
   III. Gangue and Flux.
8. Write down the structural formula of . a) Isobutyl amine and b) Propionoic acid
9. Give the IUPAC name of following compounds.



10. Classify the following oxides :
    i. MgO ii. ZnO iii. Na_2O_2 iv. P_2O_5
11. Give two examples to show that hydrogen can act as a reducing agent.
12. Why ionic compounds have higher melting and boiling point than covalent compounds?

Group 'B'

Attempt any five questions: ***[5x12=60]***

13. State and explain Avogadro's law. Prove that Mol.wt =2 x Vapour density.

14. Balance the following redex reaction by oxidation number method.
    $Zn + HNO_3 \longrightarrow Zn(NO_3)_2 + NO_2 + H_2O$
15. Copper wire reacts with silver nitrate solution to give silver metal and a solution of copper nitrate. How many grams of metallic silver is produced, if 2.37 gm of copper has reacted?

16. Discuss the basic assumption of electronic theory of valency.
17. Discuss the position of hydrogen is Periodic table.
18. Describe the Lassaigne's test for nitrogen and sulphur in organic compound.
19. Explain briefly the concentration of the ores.
20. Write a short note on (any two)
    i. Solvent property of water.
    ii. Alumino Thermic process.
    iii. Calcination and Roasting

Best of Luck

Chemistry Department

KATHMANDU

DON BOSCO COLLEGE

2nd Terminal Exam - 2059

Class: XI **F. M. : 100**

Subject: English **P. M. : 50**

Time : 2 hrs.

Attempt all the questions:

1.a Read the following dictionary entry and answer the questions that follow: [6]

Outlook/autluk/n.[usu.sing.] 1. a view from a particular place: *a pleasing outlook from the bedroom window into the garden* 2. future probabilities : *The weather outlook for the weekend is bad/ a poor outlook for the tourist trade* 3. [(on)] one's general point of view: *He has a very strange outlook on life*.

i) What is the word-class of the headword.
ii) What do 'usu'. and 'sing'. mean?
iii) From which definition does the following sentences come?
" *His outlook on politics has been changed.*"

b. Choose the correct guidewords for each headword: [4]

Headword	Guidewords
i) lady	i) laden/landed ii) label/ladder iii) landfall/lash iv) sink/situation
ii) sketch	v) six/skin vi) skip/slap

2. Give the long answer of the following: [15]

a) How does Hampl see herself and her mother connected by the tea cup?

3. Give short answer of the following: [7.5x2=15]

a) Explain the paradox in "The child is father of the man".
b) How is Phoenix taking the long trip to town?

4. Who do you think is either the greatest musician or the greatest living writer or the greatest living statesman? Write about 100 words saying why you have chosen her. [15]

5. Add a general statement, saying what each of the following people <u>like to do</u>, as in the example. [10]

Example: Fred reads two newspapers, and watches all the current affairs programmes on TV ….: In other words, Fred <u>likes to</u> keep up with world events.

a) Janet goes running every morning, and plays a lot of tennis.
b) Paul goes out every night, and has a party most weekends.
c) When she's abroad, Nora writes a lot of letters, and phones home every week.

d) Steve doesn't allow talking in class and his students have to stand up when he comes in.
e) The Browns hoover all the carpets once a week, and dust the furniture everyweek.

5. Put the verbs in brackets into the correct form. [10]

a) I could see a man (sit) on the balcony and (read) a newspaper, Then I saw him (get) up and (go) indoors.
b) I turned round and saw a snake slowly (slither) towards me.
c) I could hear a car (come) fast along the main road. I heard the driver (brake) hard.
d) I thought I heard someone (break) a window in the next room.
e) I heard the bomb (explode), and felt the whole building (shake)

6. Give a brief description of a journalist using the following verbs in the passive. [10]

publish, send, ask, mistake, arrest.

7. Read the following passage and answer the questions: [15]

Quiet costs money. No manufacture of engines is going to pursue quietness simply for philanthropic reason. Even now the strides made in the design of quieter turbo-fan engines are not automatically of benefit to us. Give an airline quieter planes and the pilots will employ more power after take-off and still keep within the limits of airport noise regulations. A machine manufacturer will endeavor to make a quieter product only if he is compelled to by legislation or because customers want quiet machine and will choose a rival product for its lower noise level. A machine buyer will but select a quiet machine without good reason. Those good reason exit but they have to be dragged out into the light of day. Even then legislation will be needed before the majority of those responsible will do anything.

a. What does the writer sat about machine manufacturer?
b. When will clients lay emphasis on a product of lower noise level?
c. What is the message to the people in authority?
d. How does the writer pinpoint the imperfection of engines?
e. Give a suitable title of the passage?

Best of Luck

KATHMANDU

DON BOSCO COLLEGE (10+2)

2nd Terminal Examination -2059

Stream: Science **Time: 2 hrs.**
Class: XI **F.M.: 100**
Subject: Biology **P.M.: 40**

Attempt all ten questions:

1. **Answer following question in short :** **[2x11=22]**

a. What do you mean by actinomorphic flower?
b. Define placentation.
c. What is thallus?
d. What is alternation of generation?
e. Define the term productivity & mention its type?
f. What is community?
g. What are chromophil cells?
h. Write the food habit of earthworm.
i. Give the function of pericardial fluid.
j. Where do you find the chorda tendinae.
k. What is white precipitation test?

2. Answer briefly the following questions: **[5x6=30]**

a. Write important characteristic feature of Phylum Annelida.
b. Differentiate between primary & secondary succession.
c. Draw a well labelled diagram of Mushroom.
d. Draw a diagram of Funaria sporogonium.
e. Discuss the cutaneous respiration in frog in short.
f. What do you mean by adaptive radiation.

3. Describe the digestive tract pf earthworm with well labeled diagram. [12]

Or

Explain the external feature of Pheretina with necessary diagram.

4. Describe the structure of Heart of frog. [12]

Or

Describe the significance of anatomical structure of animal in evolution?

5. What is Bio-geochemical cycle? Discuss the Nitrogen Cycle in nature. [12]

Or

Define the term mitosis? Explain the various stages of mitosis with well labelled diagram. Mention its significance?

6. Describe the diagnostic characters of family cruciferae with floral formula & diagram. Write the name of any two economically important plant of this family.
[12]

Or

Describe the sexual reproduction in Marchantia.

Best of Luck

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DON BOSCO COLLEGE

2ND Terminal Exam - 2059

Stream: Science **Time : 2 hrs.**

Class: XI **F. M. : 100**

Subject: Mathematics **P. M. : 40**

Attempt all questions:

GROUP A

[5x3x3=45]

1. a) If n(A) =37, n(B) =50 and $A \subset B$, find n $(A \cup B)$, n$(A \cap B)$, n(A-B).

   b) In a triangle ABC, if a =13 cm, b=14cm, c=15cm, find $\sin\frac{A}{2}$

   c) Prove that $\sin^{-1}x = \tan^{-1}\frac{x}{\sqrt{1-x^2}}$

2. a) If (x-2) is a factor of x^3-3x^2+4x+k, find k.

   b) Obtain the equation of the straight line passing through the point (3,4)and cutting off equal intercepts on the axes.

   c) Find partial fractions of $\frac{5x+7}{(x+1)(x+2)}$

3. a) Define skew symmetric matrix with suitable example.

   b) Show that $\begin{vmatrix} \frac{1}{a} & bc & 1 \\ \frac{1}{b} & ca & 1 \\ \frac{1}{c} & ab & 1 \end{vmatrix}$ =0 (without expanding)

   c. If A = $\begin{bmatrix} 4 & 0 \\ 0 & 5 \end{bmatrix}$, A X= $\begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix}$, find a matrix X.

4. a) Evaluate $\lim_{x \to 0} \frac{1-\cos 9x}{x^2}$

   b. If y = $\frac{x^2}{1-x^2}$, find $\frac{dy}{dx}$

   c. Find $\frac{dy}{dx}$ when y =$\sqrt{8-5x}$

5. a) If the equation $x^2+(k+2)x+2k=0$ has equal roots, find k.

   b) If x+i y= $\frac{1-i}{(1+i)^2}$, find (x,y)

   c) Apply cramer's rule to solve 2x+5y=7, 5x-2y+3=0

GROUP B

[11x5=55]

6. If A and B are subsets of universal set U, prove that $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

7. Solve $\sin X + \sqrt{3}\cos x = \sqrt{2}$

8. If $c^4 - 2(a^2+b^2)c^2 + a^4 + a^2b^2 + b^4 = 0$, prove $C = 60^0$ or 120^0.

9. If $A = \begin{bmatrix} 1 & 2 & -1 \\ 2 & 0 & 1 \\ 0 & 3 & -1 \end{bmatrix}$, find A^{-1}

10. Find the equation of the line which is at right angles to $3x+4y=12$, such that its perpendicular distance from origin is equal to length of perpendicular from (3,2) on the given line.

11. Discuss the continuity of the function.

$f(x) = 2x+1$ for $x<1$

$2x$ for $x=1$ } at $x=1$

$3x$ for $x>1$

12. Find, from principles the derivative of $x+\sqrt{x}$.

13. Use De Moiver's theorem to find cube roots of unity.

14. Form a quadratic equation whose roots are reciprocals of the roots of $ax^2+bx+c=0$.

15. Solve by row-equivalent matrix method.

$x-y+2z=0$

$x-2y+3z=-1$

$2x-2y+z=-3$

or

Solve, by using inverse matrix method.

$4x+5y=2$

$2x+3y=0$

16. Resolve into partial fraction: $\frac{x^3}{(x+2)(x^2+3)}$