

SUKUNA SECONDARY SCHOOL

Sundarharaicha-10, Morang

First Terminal Examination-2079

Class: XI[Science+Civil]

Full

Mark: 25

Subject: Physics(1011)

Time: 1 Hour

Students are required to give their answers in their own words as far as practicable. Figures in the margin indicates full marks.

Attempt all the questions.

1. (a) Multiply with correct significant figure:
 $1.6105 \times 2.90 \times 5.5$ [1]
- (b) A student writes $\sqrt{\frac{R}{2GM}}$ for escape velocity. Check the correctness of the formula using dimensional analysis. [2]
- (c) Convert 10 erg into Joule. [2]
2. (a) Define resolution of a vector. Express a vector in the form of its rectangular components. [2]
- (b) At what angle two forces $\vec{P} + \vec{Q}$ and $\vec{P} - \vec{Q}$ act so that the resultant is $\sqrt{3P^2 + Q^2}$. [2]
- (c) If $\vec{A} \cdot \vec{B} = 0$, find the angle between $\vec{A}$ & $\vec{B}$. [1]
3. (a) What fractional change in Fahrenheit scale on 1°C change in Celsius scale? [1]
- (b) Define linear and superficial expansion coefficient in solid. Also establish the relation between them. [3]
- (c) Frozen water pipe often bursts. Why? [1]

a) Find the value of focal length of plane mirror. [1]

(b) Derive mirror formula for concave mirror when real image is formed. [3]

(c) If speed of light in medium is 2.1×10^8 m/s and that of in vacuum is 3×10^8 m/s, what will be the refractive index of the medium? [1]

5. (a) How many electrons are contained in 1 C charge? [1]

(b) Explain how a body can be charged positive by method of induction. [2]

(c) Two charges 1×10^{-6} C and -4×10^{-6} C are separated by distance 20 cm. Find the magnitude of force between the charges. [given, $\epsilon_0 = 8.85 \times 10^{-12} \text{ C}^2\text{N}^{-1}\text{m}^{-2}$] [2]

!!! GOOD LUCK!!!

SUKUNA SECONDARY SCHOOL

Sundarharaincha -10, Morang

class:11 (Science)

Time : 1hr

FM: 25

sub: Mathematics

Attempt all the questions.

Group-A (1x4=4)

Write the correct answers

1. The imaginary part of the complex number $3+i$ is
a. 3 b. 0 c. 1 d. (3,1)

2. In a skew symmetric matrix, each diagonal element is

a. 3 b. 0 c. 1 d. 2

4. For any rational value of n , $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}$ is equal to a.

na^{n-1} b. nx^{n-1} c. x^{n-1} d. a^{n-1}

Group-B (5x3 =15)

5 a. Define complex number. Also find the values of real numbers x and y if $(x+2) + yi = (3+i)(1-2i)$

3

b. Simplify $3i^2 + i^3 + 9i^4 - i^7$

6 a. Define collinear vectors. Show that the vectors $\vec{i} + 2\vec{j} + 4\vec{k}$, $2\vec{i} + 5\vec{j} - \vec{k}$, $3\vec{i} + 8\vec{j} - 6\vec{k}$ are collinear. 3

b. Show that the vectors $\vec{a} - 2\vec{b} + 3\vec{c}$, $-2\vec{a} + 3\vec{b} - 4\vec{c}$, $-\vec{b} + 2\vec{c}$ are coplanar 2

7 a. Define symmetric matrix. If $A = \begin{pmatrix} 4 & -5 \\ 3 & 6 \end{pmatrix}$ and $B = \begin{pmatrix} 2 & 3 \\ -1 & -2 \end{pmatrix}$ prove that $(AB)^T = B^T A^T$ 3

b. Without expanding, prove that the value of the determinant is zero. $\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix}$

Group - C (6)

8 a) Evaluate: $\lim_{x \rightarrow a} \frac{\sqrt{x+a} - \sqrt{3x-a}}{x-a}$ 3

b) Evaluate: $\lim_{x \rightarrow \theta} \frac{x \cot \theta - \theta \cot x}{x - \theta}$ 3

THE END

SUKUNA SECONDARY SCHOOL

Sundarharaincha-10, Morang

(First terminal examination - 2079)

Class: 11 (Science)

F.M. - 25

Subject: Chemistry

Time: 1 hour

GROUP: A

Rewrite the correct options of each questions in your answer sheet.

(1×5 = 5)

1. Which of the following has molecular formula $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$?
 - a) Washing soda
 - b) White vitriol
 - c) Blue vitriol
 - d) Gypsum salt
2. One mole of compound represent which of the following;
 - a) Avogadro's no.
 - b) molar mass
 - c) Atomic mass
 - d) all
3. The oxidation no. of Mn in MnO_4^- is;
 - a) +8
 - b) +7
 - c) -7
 - d) -1
4. The limitation of Vital force theory was due to formation of Urea by;
 - a) Lavoisier
 - b) Wohler
 - c) Berthlot
 - d) Berzelius
5. The electronic configuration $[\text{Ar}] 4s^2 3d^6$ is for;
 - a) Copper
 - b) Manganese
 - c) Iron
 - d) Chromium

GROUP: B

Short answers questions (any four) (5×4 = 20)

6. A drop of water weight 0.18g. Answer the following question.
 - a) How many moles of water are present?
 - b) How many molecules of water present?
 - c) How many atoms of hydrogen are present?
 - d) How many atoms of oxygen are present?
 - e) How many grams of H and O are present?

7. (a) 34.2 gram of Sucrose ($C_{12}H_{22}O_{11}$) are dissolved in 180 gram of water. Calculate the number of oxygen atoms in the solution.
- (b) What will be the molecular mass of a gas, 11.2 litres of which at NTP weight 14 g ?
- (c) Which one has higher mass among 2g of hydrogen or 6.023×10^{21} numbers of oxygen?
8. What do you mean by the oxidation number of Cl in $KClO_3$ is +5? Differentiate between oxidation and reduction. Calculate the oxidation no. of S in SO_4^{2-} and $Na_2S_2O_3$.
9. What is Redox reaction? Balance the following redox reaction and also identify oxidant and reductant.
- $$Zn + NaNO_3 + NaOH \longrightarrow Na_2ZnO_4 + NH_3 + H_2O$$
10. One of the reasons to have larger number of organic compound is Catenation.
- Define catenation property.
 - Which element in the organic compound shows catenation property?
 - What do you mean by tetravalency?
 - What is the bond angle in tetrahedral structure?
 - Give some examples of foreign elements.

OR

Write short note on Rutherford alpha-ray experiment.

The End

Sukuna Secondary School

Term Examination-2079

Grade: XI

Time: 1 hour

F.M: 25

Subject: Computer Science

P.M: 10

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group 'A' (Multiple Choice Questions)

Attempt all questions

[5×1=5]

.. Tick the best alternatives.

- a. was the main electronic component used in third generation of computer.
 - i. Transistor
 - ii. Integrated Circuit
 - iii. Vacuum Tube
 - iv. VLSI
- b. programming language was/were used in first generation of computers.
 - i. Machine language
 - ii. Assembly language
 - iii. Both of above
 - iv. None of the above
- c. The part of CPU that performs all the processing tasks is known as.....
 - i. ROM
 - ii. RAM
 - iii. Control Unit
 - iv. Arithmetic and Logic Unit
- d. Boolean algebra describes.....
 - i. the logical relation of the Boolean variable.
 - ii. the Behavior of logic circuit.
 - iii. the relationship between input variables and output variables.
 - iv. All of above.
- e. Base of number system is also called.....
 - i. root
 - ii. prefix
 - iii. suffix
 - iv. radix

Group 'B'

Give short answer to the following questions.

[4×3=12]

2. Subtract $(10001)_2$ from $(11011)_2$ using 1's and 2's complement. [4]

OR

Differentiate between Analog and Digital Computers.

3. State and Prove De Morgan's Theorem.

[4]

OR

Write major characteristics of fourth generation of computers.

4. Write short notes on: (any two)

[2×2]

- a. Cache memory.
- b. Mobile Computing.
- c. Mainframe Computer.

Group 'C'

Give long answer to the following questions.

[1×8=8]

5. Discuss the term computer Architecture. Draw block diagram and explain with the main component of a computer system.

[2+2+4]

OR

Explain AND, OR, NOT, NOR gate with its truth table, logic symbol and Venn diagram.

[8]

-Best of Luck-

Sukuna Secondary School

Sundarharaincha – 10, Morang

Compulsory English (Eng. 003)

First Terminal Examination - 2079

Grade – XI

F.M -25

Time: 1 hr

P.M - 10

1. Read the text and do the tasks.

4

“Cured yesterday of my disease, I died last night of my physician,” says Matthew Prior, a celebrated pharmacologist, while talking about the deleterious effects of drugs in his book, “The Remedy Worse than the Disease”. There is no dearth of patients dying of misguided treatment.

Disorder bound to disappear in a short duration. In this era of drugs we must familiarize ourselves with the term “Iatrogenic disease (physician caused ailment)”. When a physician administers medicines without a complete understanding of the patient’s condition, drugs play havoc. A person may become the victim of a worse disease or even lose his life.

With Analgin, for instance, special precautions should be taken in case of pregnancy, bronchial asthma, renal and hepatitis dysfunctions and blood-related disorders. It has been banned in several countries, including the USA and Sweden, because of its unexpected and negative effects that lead one even to death through an anaphylactic shock. An anaphylactic shock is a process that leads to a severe fall in the blood pressure, bronchoconstriction, the swelling of blood and lymph vessels and sometimes death because of the loss of fluid in these vessels. Anaphylaxis usually occurs suddenly, in minutes after the administration of a drug. The well-known drug, penicillin, and many other drugs, may cause anaphylaxis.

The term “side-effects” is a part of an ailing layman’s vocabulary but adverse drug reactions are known only to a more aware and literate patient.

Ciprofloxacin, when given for an ear-infection, may cause vertigo and amoxicillin, while fighting a throat infection, may hurt the stomach. Similarly, while chemotherapy given for cancer may lead to indigestion and hair fall, steroids administered continuously may lead to obesity and diabetes.

Drugs are meant to eliminate disease. In the quest for avoiding the misery of sickness, man has invented medicines that may themselves cause diseases. The illness caused by a drug may be short-term or long-term. Side effects are short-term and predictable. The unpredictable and bizarre reactions are termed as adverse reactions. Varieties of drugs cure many ills but are also known to cause irregular heart beat and even sudden death.

A. Answer the following questions by choosing the most appropriate option:

1x4=4

- i) An "Iatrogenic disease" is an ailment caused by.....
 - (a) infection in the hospital ward
 - (b) overdose of anaesthetic
 - (c) the wrong administration of drugs by a physician
 - (d) self-medication and buying drugs over the counter
- ii) Analgin and penicillin must be used carefully because
 - (a) these may cause suffocation
 - (b) they may create bruises
 - (c) some patients complain of leg cramps
 - (d) these may cause anaphylaxis
- iii) The word 'dysfunction' means
 - (a) disorder of brain
 - (b) indigestion
 - (c) bad temper
 - (d) not working properly
- iv) Man has invented drugs to eliminate.....
 - (a) diseases
 - (b) side effects
 - (c) death
 - (d) casualties

2. Write short answer to any two of the following questions.

(2x2=4)

- a. Who is the woman depicted in the oval portrait? (The Oval Portrait)
- b. Why has the speaker come to the Earth. (Corona Says)

c. What does her description tell you about Mrs. Wright? (Trifles)

3. Write long answer to any one of the following questions.

(1×5=5)

a. Describe The Selfish Giant and his Garden. (The Selfish Giant)

b. Summarize the poem 'A Red, Red Rose'. (A Red, Red Rose)

4. Write a letter to your friend stating about your plan in Dashain.3

5. Write an essay on the topic "Uniform makes everyone Responsible". 5

6. Do as instructed.

(4×1=4)

a. The art of producing beautiful writing with a special pen or brush is called calligraphy. What word class does the underlined word in the sentence belong to?

b. Arrange the following words as per the order in a dictionary: chat, chopper, chance, chart, chancellor

c. What does the prefix 'under' - in the word UNDERESTIMATE mean?

i. below ii. in iii. around iv. above

d. Fill in the gaps with suitable article.

i) He dived _____ the river to catch a log. (Put appropriate preposition)

The End

सुकुना माध्यमिक विद्यालय

सुन्दरहरैँचा १०, मोरङ

प्रथम त्रैमासिक परीक्षा-२०७९

विषय: नेपाली

कक्षा: ११

पूर्णाङ्क: २५

उत्तीर्णाङ्क: १०

१. तलका वर्णहरूलाई उच्चारण प्रयत्न र उच्चारण स्थानका आधारमा चिनाउनुहोस् : ३

ग, घ, स

२. शुद्धपारी पुर्नलेख गर्नुहोस् : २

टोलका मानिसहरूले मेरा आमाबा लाई हुटहुटि लगाइदिए, चलाख छ, कुरा चाँडै टिप्छ । विद्यालय पठाइदिनुहोस्, भविष्य राम्रो हुन्छ ।

३. कुनै एक प्रश्नको उत्तर दिनुहोस् : २

क) दिइएको अनुच्छेदबाट दुई दुईवटा तत्सम र आगन्तुक शब्द पहिचान गरी लेख्नुहोस् :

हामी रेडियो र टेलिभिजनबाट पढ्न सक्छौं । श्रव्य र दृश्य सामग्रीको उपयोगले शिक्षण सिकाइलाई दिगो बनाउँछ । कम्प्युटर र मोबाइल पनि अहिले पढाइको भरपर्दो माध्यम बनेको छ ।

ख) तल दिइएका उपसर्ग र प्रत्यय लगाई एक एक शब्द बनाउनुहोस् :

उपसर्ग: अप, वि

प्रत्यय: अन्ते, उवा

४. तल दिइएका शब्दहरूलाई शब्दकोशको प्रविष्टिअनुसार शब्दक्रममा मिलाएर लेख्नुहोस् : २

शरीर, अंश, ज्ञान, किताब

५. दिइएको अनुच्छेद पढी उत्तर दिनुहोस् :४

मुलुकमा रहेको बेरोजगार एवम् अनुत्पादक श्रम शक्तिलाई उनीहरुको योग्यता, सिप तथा दक्षता अनुरूप अन्य विभिन्न मुलुकमा रोजगारीका लागि पठाई उनीहरुमार्फत वैदेशिक विप्रेषण आय, सिप, प्रविधि र अनुभव स्वदेशमा भित्राइन्छन् । नेपालको अर्थव्यवस्थामा वैदेशिक रोजगारीको योगदान उल्लेखनीय रहेको छ । विगतको द्वन्दको समयमा अर्थतन्त्रका आन्तरिक पक्षहरु कृषि, उद्योग, व्यापार लगायतका क्षेत्रहरुमा नकारात्मक असर परेको अवस्थामा समेत वैदेशिक रोजगारीले निरन्तर टेवा पुर्‍याए तापनि दक्ष कामदार १.५ प्रतिशत, २४ प्रतिशत अर्धदक्ष र ७४.५ प्रतिशत अदक्ष जनशक्ति विदेशिने हुँदा नेपालले यसबाट पूर्ण लाभ लिन सकिरहेको छैन । मुलुकभित्रै कृषि क्षेत्रको आधुनिकीकरण एवम् व्यावसायीकरण, उद्योग क्षेत्रको विकास र विस्तार तथा विविध स्वरोजगारीका अवसर सिर्जनामार्फत बाध्यात्मक वैदेशिक रोजगारीको बाध्यात्मक अवस्था अन्त्य गरी दक्ष एवम् सिपयुक्त जनशक्तिलाई मात्र वैदेशिक रोजगारीमा परिचालन गर्दै वैदेशिक रोजगारीलाई सुरक्षित, मर्यादित र व्यवस्थित गरेमा नेपालमा आर्थिक विकासमा वैदेशिक रोजगारीबाट अधिकतम लाभ लिन सकिन्छ ।

प्रश्नहरु:

- क) नेपालको अर्थव्यवस्थामा केको योगदान उल्लेखनीय रहेको छ ?
- ख) नेपालको अर्थतन्त्रका आन्तरिक पक्षहरु केके हुन् ?
- ग) नेपालको आर्थिक विकासमा वैदेशिक रोजगारीबाट कसरी लाभ लिन सकिन्छ ?
- घ) यस अनुच्छेदका लागि सुहाउँदो शीर्षक छनोट गर्नुहोस् ?

६. कुनै एक प्रश्नको व्याख्या गर्नुहोस् :४

- क) गरुडको भैं वेग तिम्रो कुन आकाशले बाँध्न सक्यो
पौरखले रच्यो नेपाल! पहाड तराई जुट्न सक्यो ।

अथवा

ख) तिम्रो पाखुरीले खोलाको धारलाई त फर्काउँछ भने गाउँको इज्जत माथि नउठाउला त ?

७. दिइएका मध्ये कुनै एक शीर्षकमा २५० शब्दसम्ममा नघटाई निबन्ध लेख्नुहोस् : ८

क) प्राविधिक शिक्षा आजको आवश्यकता ।

ख) नेपालमा जलस्रोतको सम्भावना ।

समाप्त

Alish Chapagain