CADET COLLEGE WANA

01 August 2021

PAPER BIOLOGY FOR FIRST YEAR CLASS

Total Marks: 50   **Time: 1 Hour**

SECTION-A (Marks = 10)

Note.   **Attempt all questions from this section.**

Q.1   Encircle the correct option from the following:

i. The most important organelle in bacterial cell other than DNA is;

   a. Mesosome   b Ribosome

   c. Lysosomes   d. Nucleosomes

ii. Human lungs are spongy due to the presence of;

   a. Bronchi   b. Bronchiols

   c. Alveoli   d. Capoillaries

iii. Biologist use observation to develope a possible answers to a biological problems are_____.

   a. Observation   b. Hypothesis

   c. Experiment   d. Deduction

iv. Vestibule is present in the_____.

   a. Middle ear   b. Inner ear

   c. Outer ear   d. All of these

v. In hypogeal germination elongates _____.

   a. Hypocotyle   b. Epicotyle

   c. Cotyledon   d. Both A & B

vi. From which bond of ATP molecule energy is taken?

   a. P-P bond   b. C-N bond

   c. C-H bond   d. C-O bond

vii. The respiratory centre is sensitive to the concentration of _____ in blood.

   a. CO_2 b. O_2

   c. N_2 d. All of these

viii. Which part of brain is responsible for thinking, intelligence and emotions?

   a. Cerebrum   b. Cerebellum

   c. Thalamus   d. Hypothelamus

ix. Plant use Nitrogen in the form of_____.

   a. Nitrites   b. Ammonia

   c. Nitrates   d. Nitrogen gas

x. the complete loss of function by one or more muscle group is called

   a. Epilepsy   b. Muscles damage

   c. Paralysis   d. Sciatica

Biology

SECTION-B (Marks=40)

Note: **Attempt any eight questions from this section. Each question carries 5 marks.**

Draw neat and labelled diagram where necessary

Q- 2   Describe the osmotic adjustment in xerophytes.

Q- 3   What is binomial nomenclature?

Q- 4   Describe the basic steps of genetic engineering.

Q- 5   Breifly describe the antagonistic function of muscle.

Q- 6   Define cell cycle and explain its phases.

Q- 7   Define circulatory system of human. Draw and label structure of human heart.

Q- 8   differentiate between the following.

   a. Endo-cytosis and Exo-cytosis.
   b. Simple tissue and compound tissue

Q- 9   How "PH" of a cell affects the activity of enzyme?

Q- 10   Differentiate between atherosclerosis and arteriosclerosis?

Q- 11   Describe the following terms:

   a. Nitrogen Fixation   b. Nitrification

CADET COLLEGE WANA

01 August 2021

PAPER CHEMISTRY FOR FIRST YEAR CLASS

Total Marks: 50   **Time: 1 Hour**

SECTION-A (Marks=10)

Note.   **Attempt all questions from this section.**

Q.1   Encircle the correct option from the following

i.   Shielding effect in periods _____

   a. Increases   b. Decreases

   c. Remains constant   d. None of These

ii.   Highest ionization energy is of

   a. H   b. He

   c. Na   d. K

iii. What is the mass of carbon present in 44g of CO_2

   a. 12g   b. 6g

   c. 24g   d. 44g

iv. Nelson cell is used to prepare

   a. Na metal   b. NaOH

   c. $NaHCO_3$ d. NH_3

v.   Reduction always takes place at_____

   a. Anode   b. Cathode

   c. Both A&B   d. None of these

vi. Oxidation state of Mn in $KMnO_4$ is

   a. +1   b. +7

   c. -2   c. -6

vii. Which one of the following is lewise Acid

   a. BF_3 b. NH_3

   c. H_2O d. HCl

viii. Chemical formula of ammonium carbamate is

   a. $NH_2CO\ NH_2$ b. NH_2COONH_4

   c. NH_2COONH_2 d. NH_3COONH_3

ix. Permanent hardness of water is due to

   a. Na_2SO_4 b. $CaSO_4$

   c. $Ca(HCO_3)_2$ d. $NaHCO_3$

x. Formic Acid contains functional group

   a. –OH   b. –CO–

   c. –COOH   d. –CHO

Chemistry
SECTION-B (Marks=40)

<u>Note</u>: **Attempt any eight questions from this section. Each question carries 5 marks.**

Q- 2   Briefly explain the mechanism of acid rain.

Q- 3   How can 0zone depletion cause global warming? Explain

Q- 4   Explain why hard water is not suitable for use of our daily life activities.

Q- 5   Define mole and Avogadro's number. Calculate the no of molecules in 36g Ice cube?

Q- 6   Sketch the neat and labelled diagram of the Daniel cell.

Q-7   State Charles's law. Prove that $\frac{v_l}{T_2} = \frac{v_2}{T_2}$

Q- 8   What is hydrogen bond? Discuss hydrogen bonding in H_2O and HF.

Q- 9   Why H_2O acts as a bronted-lowery acid as well as a base. Justify your answer by giving suitable chemical reactions.

Q- 10   Draw and explain flow sheet diagram of Solvay's process.

Q- 11   Explain methods of removing permanent hardness of water.

PAPER COMPUTER SCIENCE FOR FIRST YEAR CLASS

Total Marks: 50

Time: 1 Hour

SECTION-A (Marks=10)

Note. Attempt all questions from this section.

Q.1 Encircle the correct option from the following:

i. Where is columbia supercomputer located?

    a. NASA Russia   b. NASA USA   c. NASA China   d. NASA Italy

ii. Which of the following is the exclusive legal right that prohibits copying of intellectual property?

    a. Legal Right   b. Book Right   c. Copy Right   d. All Right

iii. Which of the following is a sequence of instructions written in computer language to solve a problem?

    a. Program   b. Algorithm   c. Flowchart   d. Problem Analysis

iv. Which program translates high level language into machine language?

    a. Loader   b. Linker   c. compiler   d. Debugger

v. Which of the following is an arithmetic operator?

    a. &&   b. %   c. +=   d. < =

vi. Which of the following gates are also known as inverter?

    a. OR Gate   b. NOT Gate   c. NOR Gate   d. NAND Gate

vii. In which network topology all nodes are connected to a common communication medium or central cable?

    a. Bus   b. Ring   c. Star   d. Mesh

viii. Which symbol is used for processing in flowchart?

    a. Rectangle   b. Parallelogram   c. Diamond   d. Oval

ix. Which character terminates a C statement?

    a. Colon   b. Semi Colon   c. Perid   d. comma

x. Which loop is used when it is required to execute the loop at least once?

    a. for loop   b. while loop   c. do-while loop   d. nested loop

Computer Science

SECTION-B (Marks=40)

Note: **Attempt any eight questions from this section. Each question carries 5 marks.**

Draw neat and labelled diagram where necessary

Q-2   What is the difference b/w software engineer and hardware engineer?

Q-3   Differentiate b/w guided and unguided media with its types.

Q-4   What are the advantages of using flowcharts?

Q-5   Write a C program that reads three numbers and prints their sum, product and average.

Q-6   Differentiate b/w "while loop" and "do while loop".

Q-7   What is batch processing operating system?

Q-8   Write note on client and server network.

Q-9   What is cybercrime?

Q-10   Differentiate between high level languages and low level languages.

Q-11   What is if-else statement? Draw and explain its structure.

CADET COLLEGE WANA

01 August 2021

PAPER ENGLISH / URDU FOR FIRST YEAR CLASS

Total Marks: 50   Time: 1 Hour

SECTION ENGLISH (Marks=25)

Q.1   Write an essay on any one of the following.   10
    i.   Student's role in nation's building
    ii. Causes and effects of pollution on environment

Q.2   Use the following pair of words in your own sentences?   10
    i. Loose, Lose   ii. Affect, Effect   iii. Pray, Prey
    iv. Diary, Dairy v. Lesson, Lessen

Q.3   Translate into English   05

(1) میں صبح سے آپ کاانتظار کر رہا تھا۔

(2) جس کی لاٹھی اُس کی بھینس۔

(3) چلتی کا نام گاڑی ہے۔

(4) انہوں نے اپنا کام مکمل کیوں نہیں کیا ہے؟

(5) پولیس نے ہجوم کو منتشر کیا۔

SECTION URDU (Marks=25)

05   سوال نمبر 1۔ دیے گئے الفاظ و محاورات کو جملوں میں استعمال کریں۔

خاطر میں نہ لانا۔ دل آئینہ ہونا۔ عقل دنگ ہونا۔ تھرا اُٹھنا۔ مرجع

05   سوال نمبر 2۔   الف۔ مرکب ناقص اور مرکب نام کی وضاحت کریں نیز مرکب ناقص کی اقسام بیان کریں۔

05   ب۔ اسم جامد اور اسم مشتق کی تعریف کریں نیز مثالیں لکھیں۔

10   سوال نمبر 3۔ اپنے چھوٹے بھائی کو خط لکھیں جس میں اسے کورونا SOPs پر عمل کرنے کی ہدایت کریں۔

Total Marks: 50   **Time: 1 Hour**

SECTION-A (Marks=10)

Note.   Attempt all questions from this section.

Q.1   Encircle the correct option from the following

i.   L.C.M of $a^2 - a + 1$ and $a^3 + 1$ is_____.

    a. $a + 1$ b. $a^2 - a + 1$ c. $a^3 + 1$ d. $a^2 + a + 1$

ii.   The solution set of $\left|\frac{5x}{3}\right| = 5$ is _____.

    a. $\{ \pm 3\}$ b. $\{ 5,-5\}$ c. $\{ 4,-4\}$ d. $\{ -4\}$

iii. $\frac{1}{1+Sin\theta} + \frac{1}{1-Sin\theta} = $ _____.

    a. $2\,Sec^2\theta$ b. $2\,Cos^2\theta$ c. $Sec^2\theta$ d. $Cos\theta$

iv.   If $3i\,(2+5i) = x + 6i$ then $x=$_____.

    a. 5   b. -15   c. $5i$ d. $15i$

v.   In a circle, two chords are equally distant from the centre of the circle the chords

    are_____.

    a. Congruent   b. None congruent   c. Parallel   d. Non parrallel

vi. $(4xy^4)^3 = $ _____.

    a. $64x^3y^8$ b. $64x^3y^6$ c . $64x^3y^{12}$ d. $64x^3y^7$

vii.   In a ratio x:y , y is called_____.

    a. Relation   b. Antecedent   c. Consequent   d. None of these

viii.   If $tan\theta = \sqrt{3}$, then θ is equal to _____.

    a. 90°   b. 45°   c. 60°   d. 30°

ix.   If $A \subseteq B$, then $A \cap B$ is equal to _____.

    a. A   b. B   c. $\emptyset$ d. None

x.   An equation of the type $3^x + 3^{2-x} + 6 = 0$

    a. Exponential Equation   b. Radical Equation

    c. Reciprocal Equation   d. None of these

Maths

Note: Attempt any eight questions from this section. Each question carries 5 marks.

Q-2 Solve the following system of linear equation using inversion method.

$x+2y = -13$, $3x+6y = 11$

Q-3 Verify the identity, $\dfrac{1+Cos\theta}{Sin\theta} + \dfrac{Sin\theta}{1+Cos\theta} = 2\,Cosec\theta$

Q-4 Find the value of

$\dfrac{S-3p}{S+3p} + \dfrac{S+3p}{S-3p}$, if $S = \dfrac{6pq}{p-q}$

Q-5 Factorize : $(x+1)(x+2)(x+3)(x+6) - 3x^2$

Q-6 The difference of a number and its reciprocal is $^{15}/_4$. Find the numbers.

Q-7 Using theorem of componendo - dividendo

Solve $\dfrac{(x-2)^2-(x-4)^2}{(x-2)^2+(x-4)^2} = \dfrac{12}{13}$

Q-8 Solve: $x^{2/3} + 54 = 15x^{1/3}$

Q-9 Calculate the length of a chord which stands at a distance 5cm from the center of a circle whose radius is 9 cm.

Q-10 Prove the trigonometric identily

$(Cos\theta - Sin\theta)^2 = 1 - 2\,Cos\theta.Sin\theta$

Q-11 Evaluate; $(1+3w-w^2)(1+w-2w^2)$

CADET COLLEGE WANA

01 August 2021

PAPER PHYSICS FOR FIRST YEAR CLASS

Total Marks: 50   **Time: 1 Hour**

SECTION-A (Marks=10)

Note.   **Attempt all questions from this section.**

Q.1   Encircle the correct option from the following:

   i.   How does sound travel from its source to your ear.

      a. By changing air pressure   b. By vibration in wire or strings
      c. By electromagnetic wave   d. By infrared wave

   ii.   An electric current in conductor is due to the flow of

      a. +ve ions   b. –ve ions

      c. Free electron   d. +ve charge

   iii.   Pressure at depth in fluid_____.

      a. Increases   b. Deereases

      c. Stays the same   d. None

   iv.   The value of "g" at equator is_____.

      a. Same as at poles   b. Larger than at poles
      c. Smaller than at poles   d. None

   v.   Capacitance is defined as_____.

      a. VC   b. Q/V

      c. QV   d. V/Q

   vi.   The distance cover by a car in time "t" starting from rest.

      a. vt   b. Zero

      c. $\frac{1}{2}gt^2$ d. 2 as

   vii.   When horse pulls a cart, the action is on the _____.

      a. Cart   b. Earth

      c. Horse   d. Earth & Cart

   viii.   If the length of a simple pendulum is halve, then its time period will become .

      a. $T/2$ b. $T/\sqrt{2}$

      c. $\sqrt{2T}$ d. 2T

   ix.   Slope of work time graph is equal to

      a. Displacement   b. Acceleration

      c. Power   d. Energy

   x.   An electric charge at rest produces

      a. Only magnetic field   b. Only an electric field

      c. Neither electric nor magnetic field   d. Both electric and magnetic field

Physics

Note: **Attempt any eight questions from this section. Each question carries 5 marks.**

Q.2 Explain why?

    a. Land breeze blows from land towards sea.

    b. Deserts soon get hot during the day and soon get cool after sunset.

Q- 3 Explain how the value of 'g' varies with altitude.

Q- 4 What is barometer? Why water is not suitable to use in barometer?

Q- 5 Define the following.

    a. Physics   b. momentum   c. Torque   d. Work   e. Power

Q- 6 Discuss the main features of parallel combination of resistors.

Q- 7 State and explain ohm's law. What are its limitations?

Q- 8 Define moment of a force. Give its mathematical description and elaborate the factors on which its depends.

Q- 9 Explain coulomb's law of electrostatics and write its mathematical form.

Q- 10 If the length of a simple pendulum is doubled, what will be the change in its time period?

Q- 11 What is hook's law? What is meant by elastic limit?

CADET COLLEGE WANA

PAPER BIOLOGY FOR CLASS 11ᵗʰ 24 June 2023

Total Marks: 50   **Time: 1 Hour**

SECTION-A (Marks = 10)

Note. Attempt all questions from this section. Write the correct answers on the answer sheet provided.

Q.1 Encircle the correct option from the following

i. Respiration at cellular level is also known as:

    a. Breathing   b Ventilation

    c. Oxidation   d. All of these

ii. The largest part of the brain is:

    a. cerebrum   b. cerebellum

    c. Thalamus   d. Medulla oblangta

iii. Which of the following is not part of the axial skeleton?

    a. sternum   b. pectoral girdle

    c. Skull   d. vertebrae

iv. In parthenogenesis a new animal develops from?

    a. Fertilized egg   b. unfertilized egg

    c. sperm   d. Budding

v. Which of these can be used as a vector for inserting a gene into bacteria?

    a. plasmid   b. Algae

    c. yeast   d. E.Coli

vi. Interferons are chemicals which are used to:-

    a. kill virus   b. improve immunity

    c. work as vaccine   d. All of the above

vii. The central dogma is best represented by :-

    a. DNA+RNA = Protein   b. DNA→ RNA +Protein

    c. DNA→ RNA→Protein   d. Protein→ RNA →DNA

viii. Which connective tissue attaches two bones at a Joint?

    a. ligament   b. Tendon

    c. cartilage   d. Marrow

ix. The digestive Enzyme pepsin secreted by gastric glands begins the digestion of:-

    a. Carbohydrates   b. Protein

    c. Fats   d. Vitamins

x. Trypsin , an enzyme ,works at:-

    a. Alkaline   b. Acidic PH

    c. neutral PH   d. PH does not affect its activity

CADET COLLEGE WANA

PAPER BIOLOGY FOR CLASS 11th 24 June 2023

SECTION-B (Marks=40)

Note: **Attempt any eight questions from this section. Each question carries 5 marks.**

Q- 2   Explain the role of bioelements in living organism.

Q- 3   How human activities affect the biodiversity of an area?

Q- 4   Briefly discuss the significance of Mitosis.

Q- 5   Describe alternation of generation in flowering plants.

Q- 6   Differentiate between food chain and food web with example.

Q- 7   List down the endangered species of Pakistan and what are the reasons behind their

       population decrease?

Q- 8   How do kidneys control the composition of blood?

Q- 9   Describe the function of three major types of Joints and give an example of each.

Q- 10   How is artificial selection used for the improvement of crops?

Q- 11   Briefly describe the causes, symptoms and treatment of Asthma.

Total Marks: 50   **Time: 1 Hour**

SECTION - A (Marks = 10)

Note. Attempt all questions from this section. Write the correct answers on the answer sheet provided.

Q.1   Encircle the correct option from the following

i.   Aqueous saturated solution of sodium chloride is called

   a. Brine   b. Ammonical Brine   c. Caustic Soda   d. None of these

ii.   Which of the following has lowest ionization energy?

   a. K   b. Na   c. He   d. H

iii. When sodium react with chlorine it produces NaCl. In this reaction chlorine is

   a. Oxidized   b. Reduced   c. Remains unchanged   d. All of them

iv.   In which of the following does sulphur have an oxidation number of +7?

   a. HSO_4 b. SO_3 c. H_2SO_4 d. $H_2S_2O_8$

v.   Which of the following decolourises Br_2 water ?

   a. Ethane   b. Ethene

   c. Propane   d. Methane

vi.   Ethylene react with dilute solution of $KMnO_4$ to produce ethylene glycol. The reaction is called.

   a. tollen's test   b. Baeyer's test

   c. Silver mirror test   c. both a & b

vii. Deficiency of vitamin A causes

   a. Scurvy   b. Rickets

   c. Night blindness   d. Aging

viii. Chemical formula of urea is

   a. NH_3CONH_3 b. NH_2COONH_4

   c. NH_2COONH_2 d. $NH_2CO\ NH_2$

ix.   Temporary hardness of water is due to

   a. Na_2SO_4 b. $CaSO_4$

   c. $Ca(HCO_3)_2$ d. $NaHCO_3$

x.   Acetic Acid contains functional group

   a. –OH   b. –CO–

   c. –COOH   d. –CHO

PAPER CHEMISTRY FOR CLASS 11th 24 June 2023

SECTION-B (Marks = 40)

Note: **Attempt any eight questions from this section. Each question carries 5 marks.**

Q- 2   Explain briefly why ionization potential decreases down the group while increases from left to right along periods in periodic table.

Q- 3   Complete and balance the following chemical equations:-

a. $NH_3 + O_2 \longrightarrow$?
b. $HCl + KOH \longrightarrow$?
c. $CH_2 = CH_2 + HCl \longrightarrow$?
d. $C + H_2O \longrightarrow$?
e. $Cl_2 + H_2O \longrightarrow$?

Q- 4   Define solubility? Discuss briefly the effect of various factors affecting solubility.

Q- 5   What is acid rain? Explain briefly the adverse effects of acid rain.

Q- 6   Write down the electronic configuration of the following elements:-

N-7 , Na-11 , Si-14 , S-16 , Ar-18

Q-7   Draw the flow sheet diagram of Solvay's process.

Q- 8   Define PH ? Prove that PH + POH = 14.

Q- 9   Why H_2O acts as a bronted-lowery acid as well as a base. Justify your answer by giving suitable chemical reactions.

Q- 10   Draw the structural formula of the following compounds:-

2-Butene, 2,3,4-Trimethyl-3-hexene , Acetylene , Ethylene , 1,2-ethanediol

Q- 11   Define water pollution? Discuss briefly waterborn diseases.

CADET COLLEGE WANA

PAPER COMPUTER FOR CLASS 11th 24 June 2023

Total Marks: 50   **Time: 1 Hour**

<u>Note</u>.   Attempt all questions from this section. Write the correct answers on the answer sheet provided.

Q No. 1   Encircle the correct option from the following.

i.   Which computer is a combination of digital and analog technologies?

   a. Hybrid   b. Super   c. Mini   d. Mainframe

ii.   Which of the following operating system allows a user to run multiple programs at any given time?

   a. Single user   b. Multi user   c. Multitasking   d. Real time

iii.   The basic unit for entering data in Excel is:

   a. Row   b. Column   c. Cell   d. Formula

iv.   The row in Excel are denoted by:

   a. Letters   b. Numbers   c. Words   d. Sign

v.   Internet is the example of which type of network?

   a. LAN   b. WAN   c. MAN   d. Both b and c

vi.   In C language every statement is terminated by:

   a. Full stop   b. Double quotes   c. Comma   d. Semicolon

vii.   A types of operator that works with single operator:

   a. Unary operator   b. Binary operator   c. Ternary operator   d. None of these

viii.   Which of the following is postfix increment operator?

   a. c++   b. ++c   c. --c   d. c--

ix.   Which statement is used to move the control to the start of loop body?

   a. continue   b. break   c. exit   d. none of these

x.   The gate whose output is ' 0 ' when all the inputs are same is called?

   a. AND gate   b. NOR gate   c. XOR gate   d. XNOR gate

CADET COLLEGE WANA

PAPER COMPUTER FOR CLASS 11th 24 June 2023

Section B (40 Marks)

Note: Attempt any eight questions from this section. Each question carries 5 marks.

Q No. 2   Differentiate between shareware and freeware.

Q No. 3   What is the use of hyperlink in a word document?

Q No. 4   Differentiate between Ring topology and Mesh topology.

Q No. 5   Differentiate between Analog signal and Digital signal.

Q No. 6   What is computer security?

Q No. 7   Draw a flowchart to print even numbers from 50 to 100.

Q No. 8   Write down rules for writing variable names.

Q No. 9   Write a program to find the smallest number of three numbers using if-else statement?

Q No. 10   What is for loop? Write and explain its general syntax?

Q No. 11   What is NAND gate? Write down its truth table also draw its block diagram.

Q No 12   Describe the following HTML tags.

    i. Paragraph   ii. Heading   iii. Center

Total Marks: 50   **Time: 1 Hour**

SECTION ENGLISH (Marks = 25)

Q.1 Write an essay on any one of the following.   10

    a.   Self - Discipline and its importance

    b.   Importance of National Integration

Q.2 Use the following pair of words in your own sentences?   10

    a   Urbane, Urban   b. Stationary, Stationery   c. Canvas, Canvass

    d.   Bear, Bare e. illegible, eligible

Q.3 Change the voice of the following sentences.   05

    a.   The guard will have locked the gates by 2 P.M.

    b.   Why did you not tell me this?

    c.   Drink juice.

    d.   I shall draw a labeled diagram.

    e.   We shall do home work in time.

SECTION URDU (Marks = 25)

سوال نمبر 1- دیے گئے الفاظ و محاورات کو جملوں میں استعمال کریں۔   05

رخنہ ڈالنا، نمک چھڑکنا، اپنا الو سیدھا کرنا، شیر و شکر ہونا، اُلٹے پاؤں پھرنا،

سوال نمبر 2- الف- جملہ انشائیہ اور جملہ خبریہ کی تعریف کریں اور نیز مثالیں دے کر فرق واضح کریں۔   05

ب- قصیدہ اور مثنوی کی تعریف کریں اور مثالیں پیش کریں۔   05

سوال نمبر 3- اپنے بھائی کو خط لکھیں جس میں اسے ماحولیاتی آلودگی کے نقصانات سے بچنے کی تدبیر سے آگاہ کریں۔   10

Total Marks: 50   Time: 1 Hour

SECTION-A (Marks=10)

<u>Note.</u>   **Attempt all questions from this section. Write the correct answers on the answer sheet provided.**

Q.1   Encircle the correct option from the following

i.   A value of 'x' from which p(x)=0, is called _____ of the p(x).

   a. root   b. solution   c. zero   d. All of these

ii.   A _____ is a quadrilateral in which all sides are congruent.

   a. square   b. rectangle   c. Parallelogram   d. Rhombus

iii.   In a circle, two chords are equally distant from the centre of the circle, the chords are:-

   a. Congruent   b. not congruent   c. Parallel   d. not parallel

iv.   The measure of the external angle of a regular hexagon is :-

   a. $\frac{\pi}{3}$ b. $\frac{\pi}{4}$ c. $\frac{\pi}{6}$ d. $\frac{\pi}{2}$

v.   If A= { a,b}, B= {1,2}, then the number of all possible subset of A x B is:-

   a. 8   b. 4   c. 12   d. 16

vi   A chord is 5 cm from the center of circle of radius 13 cm. the length of chord is___:-

   a. 6cm   b. 12cm   c. 24cm   d. 30cm

vii.   The nth root of product of 'n' number of values is called _____.

   a. Arithmetic   mean   b. Geometric mean

   c. Hormonic mean   d. None of these

viii.   If α and β are the roots of $4x^2-3x+7=0$, then the value of $\frac{1}{\alpha}+\frac{1}{\beta}$ = _____.

   a. $\frac{-3}{4}$ b. $\frac{3}{7}$ c. $\frac{-3}{7}$ d. $\frac{4}{7}$

ix. $\text{Log}_9 \frac{1}{81}$ = ?

   a. -1   b. -2   c. 2   d. does not exist

x.   The point having its co-ordinates (0,0) is called:-

   a. Abscissa   b. ordinate   c. origin   d. critical point

CADET COLLEGE WANA

PAPER MATHS FOR CLASS 11th 24 June 2023

Total Marks: 50   **Time: 1 Hour**

SECTION-B (Marks=40)

<u>Note</u>: Attempt any eight questions from this section. Each question carries 5 marks.

Q-2 Solve the simultaneous equation by using graphical method, 3x+5y = 2 , 3x + 5y =8

Q-3 If α and β are the roots of $2x^2+3x +1=0$., then find the values of $\frac{\alpha^2}{\beta}+\frac{\beta^2}{\alpha}$

Q-4 Prove that $(\sec x - \tan x)^2 = \frac{1-sinx}{1+sinx}$

Q- 5 The area of a rectangle is 252 square meters . the length of its side is 9 meters longer than its width. Find its sides.

Q-6 Inscribe a regular hexagon in a circle of radius 4cm.

Q-7 Solve $8(x^2 + \frac{1}{x^2}) - 42(x - \frac{1}{x})+29=0$

Q-8 If x={1,2,3,4} and y= {5,6,7,8} then write.

    i.   a function from x to y.

    ii.   a 1-1 function from x to y.

    iii.   Bijective function from y to x.

Q- 9 Using Apollonius theorem find the length of the medians of a triangle having sides 10cm , 12 cm and 16 cm respectively.

Q-10 For what value of 'K' the expression $4x^4+32x^2+96+\frac{128}{x^2} + \frac{K}{x^4}$ will become a perfect square.

Q-11 The measure of the three angles of a triangle are in the ratio 2:3:4. Find the measure of the largest angle?

CADET COLLEGE WANA

PAPER PHYSICS FOR CLASS 11th 24 June 2023

Total Marks: 50 **Time: 1 Hour**

SECTION-A (Marks=10)

<u>Note.</u> Attempt all questions from this section. Write the correct answers on the answer sheet provided.

Q.1 Encircle the correct option from the following:

i. Floppy disc is made of flexible plastic, which is coated with _____ compounds.

a. Diamagnetic b. paramagnetic c. Ferromagnetic d. None

ii. The electric devices in the artificial satellite are controlled from earth station with the help of _____.

a. current b.electrical power

c. computer d. electromagnetic waves

iii. Gastroscope is an instrument to view the _____.

a. heart b.lungs c. stomach d. liver

iv. A light year is distance traveled by light in one year , it travels about 9.460×10^{15}m. How many significant figures are in this number_____?

a. 15 b.3 c. 4 d. 18

v. The relative velocity of geostationary satellite with respect to earth is.

a. 7.9 kms^{-1} b. 11.2 kms^{-1} c.9.8ms^{-1} d. 0 kms^{-1}

vi. _____ is used for curing cancerous tumors and cells.

a. Sulphur-32 b. Cobalt-60 c. Uranium-238 d. Polonium-121

vii. The device which converts mechanical energy into electrical energy is_____.

a. motor b. generator c. battery d. thermocouple

viii. If the length of a simple pendulum is halved , its time period will become:-

a. $\frac{T}{2}$ b. $\frac{T}{\sqrt{2}}$ c.$\sqrt{2T}$ d. 2T

ix. A car is going backwards at 5ms^{-1} . After 10 s of uniform acceleration the car is going forward at 10ms^{-1} . The acceleration is _____.

a. 0.5ms^{-2} b. 0.75ms^{-2} c. 1.5ms^{-2} d.5ms^{-2}

x. For making cooking utensils, which of the following pairs of properties are most suited.

a. high specific heat and high conductivity

b. low specific heat and low conductivity

c. high specific heat and low conductivity

d. low specific heat and high conductivity

CADET COLLEGE WANA

PAPER PHYSICS FOR CLASS 11th 24 June 2023

SECTION-B (Marks=40)

Note: Attempt any eight questions from this section. Each question carries 5 marks.

Q.2   Differentiate between renewable and non renewable energy source with two examples each?

Q-3   Write note on; (i) Banking of roads.   (ii)   skidding of vehicles.

Q-4   A ball is dropped from a certain height on to the floor and keeps bouncing is the motion of ball simple harmonic ? Explain.

Q-5   A capacitor holds 0.06C of charge when fully charged by a 6 volt battery. Calculate capacitance of capacitor?

Q-6   Define the following terms.

   i.   Momentum   ii.   Power   iii.   Killo-watt-hour

   iv.   Frequency   v.   Amplitude

Q-7   What is meant by resolution of force? Find the two rectangular components of a force of 100N which is acting at an angle of 60^0 with x-axis.

Q-8   Two capacitors of capacitance 2PF amd 3PF , are connected in parallel to 9 volt battery , calculate the equivalent capacitance and the charge on each capacitor?

Q-9   Define sound. What is the speed of the sound in air at -20 C^0 ?

Q-10   Define equilibrium. What is the difference between translational and rotational equilibrium?

Q-11   What is transformer? Explain the working of a transformer in connection with mutual Induction.

Cadet College Wana (SWTD)

Class 11th (Special Entry Test 2024)

Paper Biology

Time Allowed: 1 hr **Section –A (Marks : 10)** **Total Marks: 50**

Q No. 1:- **Encircle the correct option.**

I. An angiosperm has two different alleles for a single trait. Its genotype is called.

   a. Homozygous b. Heterozygous c. Hemizygous d. Homologous

II. The three R_s responsible for the better environment are.

   a. Reduce, Reuse, Recycle b. Random, Reduce, Recall

   c. Read, Register, Recall d. Reduce, Rebuild, restrict

III. If 2n=8 for a cell, then the chromosome number in egg cell after meiosis would be.

   a. 12 b.10 c.8 d. 4

IV. Types of blood vessels that surround the alveoli.

   a. Artery b. Arteriole c. Capillary d. Vein

V. Genes are short segment of.

   a. DNA b. Protein c. Lipid d. Carbohydrate

VI. The point where muscles are attached to the bone.

   a. Tendon b. Ligament c. Origion d. Insertion

VII. Phenotype is the expression of _____ .

   a. Genetic makeup b. Chemical Composition

   c. Physical makeup d. Metabolism

VIII. Process that carries away nerve impulses from cell body is _____ .

   a. Axons b. Dendrites c. Synapses d. Myelin Sheath

IX. Natural selection operates to produce changes in.

   a. Individuals b. Populations c. Races d. Phyla

X. Liver plays a role in excretion. It makes urea from.

   a. Uric Acid b. Ammonia c. Carbon dioxide d. Amino Acid

Note: Attempt any 8 questions of the following. Each question carries 5 marks.

Q No:2. Differentiate between emphysema and asthma.

Q No:3 What is the composition of cell wall in plants , fungi and bacteria?

Q No:4 Why Homeostasis is necessary for living organisms?

Q No:5 What is the main difference between Anaphase-I and Anaphase-II of Meiosis?

Q No:6 Draw and explain the structure of Nephron.

Q No:7 Why pituitary gland is known as Master Gland? Give an example.

Q No:8 How does turgor pressure develop in a plant cell?

Q No:9 What are the waste materials removed by coniferous trees, rubber plant and lady finger?

Q No:10 What are the differences between dominant and recessive alleles?

Q No:11 Write any five general characteristics of Enzymes?

Time Allowed: 1 hr   Section –A (Marks =10)   **Total Marks: 50**

Q No. 1:-   Encircle the correct option.

I. $\sqrt{-(-9)^2}$ = ?

  a. 9   b. $9i$ c. -9   d. $-9i$

II.   LCM of a^2+a+1 and a^3+1 is _____.

  a. a+1   b. a^2-a+1 c. a^3+1 d. a^2-1

III.   If a and b are roots of $4x^2+3x+7=0$ then the value of $\frac{1}{a} + \frac{1}{b}$ is _____.

  a. $\frac{-3}{4}$ b. $\frac{3}{7}$ c. $\frac{-3}{7}$ d. $\frac{4}{7}$

IV. $1+ \tan^2\theta=$_____.

  a. $\sin^2\theta$ b. $\cos^2\theta$ c. $\text{Cosec}^2\theta$ d. $\text{Sec}^2\theta$

V.   Identify the item that does not have same ratio as the other three_____.

  a. $\frac{30}{45}$ b. 4 to 6   c. 2:3   d. 3 to 2

VI.   Polynomial of degree 4 is called _____.

  a. Linear   b. Quadratic   c. Cubic   d. Bi quadratic

VII.   If $\tan\theta = +1$ then $\sin\theta =$_____ where θ lies in 3rd quadrant.

  a. $\frac{1}{2}$ b. $-\frac{1}{2}$ c. $-\frac{1}{\sqrt{2}}$ d. $\frac{1}{\sqrt{2}}$

VIII.   Which one is the solution set of $|-x|=0$

  a. {-1}   b. {1}   c. { }   d. { 0 }

IX. $45^0=$_____radian.

  a. $\frac{\pi}{3}$ b. $\frac{\pi}{4}$ c. $\frac{\pi}{6}$ d. $\frac{\pi}{2}$

X.   The equation in matrices $(AB)^{-1}=B^{-1}A^{-1}$ is true if A and B are.

  a. Singular   b. Non Singular   c. Square   d. Diagonal

Note: Attempt any 8 questions of the following. Each question carries 5 marks.

Q No:2 Domain of binary relation R = {(x,y) / y+1 = 2x^2} is set N. Find its range.

Q No:3 If x= $\sqrt{10}$ +3. Find the vale of $x - \frac{1}{x}$.

Q No:4 A tree is 150 m above the sea level. Angle of depression of boat from its top is 60^0. Find the distance between the boat and light house.

Q No:5 Prove that $\frac{Sinx+Cosx}{Sinx} - \frac{Cosx-Sinx}{Cosx} = SecxCosecx$

Q No:6 Factorize using factor theorem x^3-4x^2-3x+18

Q No:7 Find the value of K if root of x^2-7x+k = 0 differ by unity.

Q No:8 Let z$_1$= 3+4i and z$_2$ = 3 − 2i. Find the quotient $\frac{z_1}{z_2}$.

Q No:9 If x +2y =1 , 2x +3y = $\frac{5}{2}$, solve by Cramer's rule.

Q No:10 The angle in a semi-circle is a right angle.

Q No:11 Find the geometric mean of the marks 60, 65, 70, 80, 85, 90, 75.

Cadet College Wana (SWTD)

Class 11th (Speical Entry Test 2024)

Paper English - Urdu

Time Allowed: 1 hrs   Total Marks: 50

ENGLISH – SECTION   Marks: 25

Q: 1 Write an Essay on any one of the following.   (10)

    a.   Justice delayed is justice denied

    b.   Pen is mightier than sword

Q: 2 Use the following pair of words in your own sentences.   (10)

    a.   Vale, Veil

    b.   Stare, Stair

    c.   Assent, Ascent

    d.   Dinning, Dining

    e.   Complement, Compliment

Q: 3 Change the voice of the following.   (5)

    a. Let the page be turned over

    b. Who stole your bike?

    c. The sweater is knitted by her.

    d. I know him.

    e. Did you show me the dress?

URDU – SECTION   Marks: 25

سوال: 1 الف۔ مجاز مرسل اور کنایہ کی تعریف لکھیں نیز تین تین مثالیں دیں۔   (5)

ب۔ تشبیہ اعت استعارہ کی تعریف کریں نیز ایک شعری اور ایک نثری مثال دیں۔   (5)

سوال: 2 درج ذیل تراکیب کا مطلب واضح کریں۔   (5)

الف۔ پاسبان رنگ و بو   ب۔ وارث اسرار فطرت

سوال: 3 اپنے چھوٹے بھائی کو خط لکھیں جس میں "سوشل میڈیا کے معاشرے پر برے اثرات" کے بارے میں بتائیں۔ (10)

Q No. 1:-   Encircle the correct option.

I.   EM waves are sent to a TV set via special wire called _____

     a. TV cable   b. Cable   c. Picture cable   d. None of these

II.   A and B are the two inputs of a NAND gate, its output would be 1 when_____.

     a. A=1 & B=1   b. A=0 & B=1   c. A=1 & B=0   d. A=0 & B=0

III.   The power of a heater is 3000W and voltage is 240V, the value of fuse used in circuit is__.

     a. 3 Amp   b. 5 Amp   c. 20 Amp   d. 13 Amp

IV.   The pressure of a gas in a container depends upon.

     a. Temperature   b. Quantity of gas   c. KE of molecules   d. All of them

V.   The relation between Co-efficient of linear and volume expansion is.

     a. $\alpha = 3\gamma$ b. $\gamma = 3\alpha$ c. $\gamma = \frac{\alpha}{2}$ d. $\gamma = 6\alpha$

VI.   When a small resistance joined in parallel with Galvanometer, it becomes.

     a. Ammeter   b. voltmeter   c. Ohmmeter   d. Avometer

VII.   The quantity of a radioactive substance is reduced to $\frac{1}{8}^{th}$ of its initial amount. How many lives have elapsed?

     a. 2   b. 3   c. 4   d. 5

VIII.   Ohm is equal to_____.

     a. $\frac{Volt}{Amp}$ b. Volt-Amp   c. $\frac{Amp}{Volt}$ d. None of these

IX.   The term ratio of a transformer is 10, it means_____.

     a. $V_s = 10V_p$ b. $N_s = \frac{N_p}{10}$ c. $N_s = 10N_p$ d. $V_s = \frac{V_p}{10}$

X.   Which is an example of longitudinal waves?

     a. Radio wave   b. Sound wave   c. Light wave   d. Water wave

Cadet College Wana (SWTD)

Class 11th (Special Entry Test 2024)

Paper Physics

Section – B (Marks: 40)

Note: Attempt any 8 questions of the following. Each question carries 5 marks.

Q No:2. A sound wave has a frequency of 3 KH$_z$ and wavelength 30cm. How long will it take to travel 2 Km?

Q No:3 Prove that motion of a simple pendulum is SHM.

Q No:4. Can a transformer operate on direct current?

Q No:5. What do you know about Critical angle?

Q No:6. Describe total internal reflection & conditions necessary for it?

Q No:7. Write truth table of AND and OR Gate.

Q No:8 If a concave mirror produces a real image is the image necessarily inverted. Explain?

Q No:9 What is intensity level? Derive intensity level$= 10 \log \frac{I}{I_0} d_B$

Q No:10 Write α - decay process for $_{91}Pa^{234}$. Identify the parent and daughter nuclei.

Q No:11 Explain DC motor with diagram.

Cadet College Wana (SWTD)

Class 11th (Special Entry Test 2024)
Paper Computer Science
Section – A (Marks :10)

Time Allowed: 1 hr   Total Marks : 50

Q No. 1   Encircle the correct option from the following.

i.   Which statement is used to move the control to the start of loop body?

c. else   d. break

a. continue   b. exit

ii.   Which of the following gate is known as inverter?

c. NOT   d. NAND

a. OR   b. AND

iii. What is the maximum number of possible input combination in a truth table that has three variables?

c. 8   d. 9

a. 3   b.6

iv. Which of the following tag is used for superscript

c. \[\]   d. \\

a. \<s>\</s>   b. _\

v.   \<a>\<\ tag used for:

c. table   d. frame

a. hyperlink   b. list

vi   The output of the compiler is called:

a. program   b. source code   c. linked code   d. object code

vii Which of the following is a logical operator?

a. %   b. \<=   c. &&   d. +=

viii Which Escape sequence is used to moves printing control to the beginning of the next line :

a. \b   b. \a   c. \n   d. \\

xi   What will be the output of the expression, 5+3*3-1?

a. 16   b. 13   c. 23   d. 12

x   if marks = 50 then the statement (marks>33)?printf("pass"):printf("fail"); will print

a. pass   b. fail   c. both a & b   d. none of these

Section –B (Marks: 40)

Note: Attempt any 8 questions of the following. Each question carries 5 marks.

Q No.2   What is Algorithm? Write role of algorithm in problem solving?

Q No. 3   Draw a flowchart to print odd numbers from 1 to 100.

Q No. 4   Differentiate between program syntax and program semantic.

Q No. 5   What are reserved words? Write down any ten reserved words. Write down rules for writing variable names.

Q No. 6   Write a program that finds the sum and product of two numbers.

Q No 7   Differentiate between break and continue statements.

Q No 8   Write down and explain general syntax of switch statement.

Q No 9   What is nested loop? Explain its general syntax.

Q No 10   What is logical AND operator and logical OR operator? Draw its truth table.

Q No. 11   State three differences between RAM and ROM.

Time Allowed: 1 hrs   Section – A (Time: 10min, Marks: 10)   Total Marks: 50

QNo.1 Choose the correct option from the following.

i. Identify Lewis Acid-Base pair from the following

a) NH_3 & H_2O b) H^+ & Ag^+ c) H^+ & H_2O d) Cl^- & O^{-2}

ii. For which general reaction unit of Kc is same as that of concentration

a) $2A + 3B \rightleftharpoons 4AB$ b) $2X + Y \rightleftharpoons 3XY$

c) $R + S \rightleftharpoons 2V + W$ d) $A + B \rightleftharpoons 2C + D$

iii. Which pair of organic compounds are isomers?

a) Butane & Butyl radical   b) C_2H_6 & C_2H_4 c) CH_3OH & C_2H_5OH d) Iso-butane & Iso-pentane

iv. Compounds in which tetravalency of C is fully satisfied

a) Aromatic compounds   b) Alkynes   c) Alkanes   d) Olefins

v. Oxidation State of O in BaO_2 is

a) -2   b) -1   c) -0.5   d) -2.5

vi. $CH_4 + Cl_2 \longrightarrow$ ....the products of reaction in the absence of light are

a) C + HCl   b) HCl + $^•CH_3$ c) Both A & B   d) No product

vii. Which one of the following is a trisaccharide?

a) Raffinose   b) Maltose   c) Sucrose   d) Galactose

viii. $CH_3COOC_2H_5$ is a/an

a) Carboxylic acid   b) Ether   c) Ester   d) Alkyl halide

ix. All of the following are chemical processes in metallurgy except

a) Roasting   b) Smelting   c) Electro-refining   d) Cyclone separation

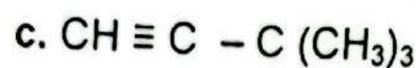x. The lowest temperature of stratosphere is

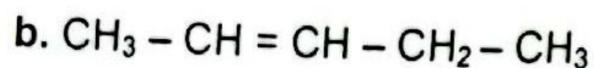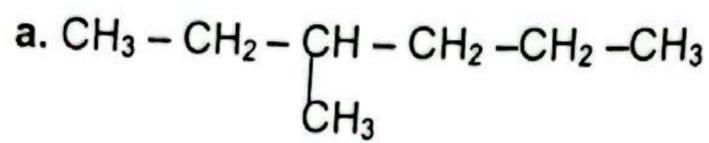a) -5°C   b) -92°C   c) 17°C   d) -55°C

Section B

Note: Attempt any 8 questions from the followings. Each question carries 5 marks.

Q No: 2 How alkenes can be converted into glycols? Support your answer by writing balanced chemical equation.

Q No : 3 How Acid Rain is caused by SO_x? Write complete mechanism for justification.

Q No: 4 Write IUPAC names of the following organic compounds.

a. $CH_3 - CH_2 - \underset{\underset{\displaystyle CH_3}{|}}{CH} - CH_2 - CH_2 - CH_3$

b. $CH_3 - CH = CH - CH_2 - CH_3$

c. $CH \equiv C - C (CH_3)_3$

d. $CH_3 - CH_2 - CH_2 - \underset{\underset{\displaystyle CH_3}{|}}{CH} - \underset{\underset{\displaystyle CH_3}{|}}{CH} - CH_3$

e. CH_3CHO
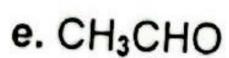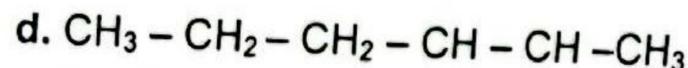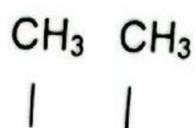
Q No: 5 Find the molarity of a solution containing 0.4g of NaOH dissolved in $250 cm^3$ of solution.

Q No: 6 Draw flow sheet diagram oif Solvay's process. How lime stone is converted into lime?

Q No: 7 How electrolytic cell is different from Galvanic cell? Give reaction that occurs on the cathode of Dry cell?

Q No: 8 What is peptide bond? Justify your answer by writing a suitable reaction.

Q No: 9 How alkynes can be oxidized?

Q No: 10 How water acts as a Bronsted Acid and Base. Write separate reactions for proof.

Q No: 11 Write electron cross dot formulae of CO, CO_2, NH_3, CCl_4 and BF_3.

Q No. 1: -   Encircle the correct option.

I. The efficiency of incandescent light bulb is

    a. 95%   b. 40%   c. 25%   d. 5%

II. The electronic circuit that gives high output when all its input is high is called

    a. OR   b. NOR   c. AND   d. NAND

III. A spring having spring constant 'k'. Cut into two identical pieces. The spring constant of each piece will be_____

    a. k   b. 2k   c. 3k   d. none of these

IV. A generator works on the principle of.

    a. Ampere's law   b. coulomb's law   c. faraday's law   d. ohm's law

V. The value of g at the surface of the moon is_____ m/sec^2.

    a. 9.8   b. 1.63   c. 4.9   d. 8.9

VI. The bending of waves around the edges of the obstacle is_____.

VII. a. reflection   b. refraction   c. diffraction   d. damping

VIII. If a DC source of 80v is connected to the primary coil of a transformer with Np = 20 turns, Ns = 5 turns then Vs = _____?

    a. 80 A   b. 40   c. 20 A   d. 0 v

VIII. The half-life of a radioactive element is 10 min after 30 min, how much sample will be left.

    a. 1/2   b. 1/4   c 1/8   d. 1/16

IX. The amount of heat required to raise the temperature of 1 kg of water by 1k is.

    a. 1 J   b. 400 J   c. 310 J   d. 4190 J

X. Which of the following material will refract light more?

    a. water   b. glass   c. Air   d. Diamond

Cadet College Wana (SWTD)

Class 11ᵗʰ (Special Entry Test 2025)

Paper Physics

Section – B (Marks: 40)

Note: Attempt any 8 questions of the following. Each question carries 5 marks.

Q No:2. How pressure varies with depth in liquid? Explain?

Q No:3 Define and explain efficiency.

Q No:4. Prove the relation between wave speed, wave length and frequency of wave?

Q No:5. What are fission and fusion. Explain with examples?

Q No:6. Explain thermal conductivity of a substance and its mathematical description?

Q No:7. What is electric field intensity? How does it relate with charge?

Q No:8 What is the function of an accelerating anode in an electron gun.

Q No:9 Differentiate between analogue and digital electronics. (Any three)

Q No:10 Explain the process of thermionic emission emitted from a filament. Draw neat Diagram.

Q No:11 What is kinetic energy? Derive the expression for kinetic energy.

Time allowed: 1hr.	Section-A (Marks = 10)	Total Marks: 50

Q1 Choose the correct option.

i. Where is Columbia super computer located?
   a) NASA Russian   b) NASA USA   c) NASA China   d) NASA Italy

ii. What are the row facts and figures given to a computer an input for processing called?
   a) Network   b) Channel   c) Dender   d) Medium

iii. Which of the following refers to a crime that involves a computer and a network?
   a) Cyber Crime   b) Shop lifting   c) Theft   d) Robbery

iv. Which statement is used to more the control to the start of loop body?
   a) Continue   b) Break   c) Exit   d) None of these

v. What is the maximum number of possible input combination in a truth table that has three variables?
   a) 3   b) 6   c) 8   d) 9

vi. Which program protects computer from many common viruses and trojans which can be harmful for the system?
   a) Internet Explorer   b) Excel   c) Word   d) Antiviruses

vii. Which language is used for creating web pages?
   a) HTML   b) Language   c) URL   d) Web browser

viii. The columns in excel are denoted by:
   a) Letters   b) Numbers   c) Words   d) Signs

ix. which of the following word is used for input in algorithm?
   a) Set   b) Read   c) Write   d) Both b and c

x. Which of the following syntax is used for multi-line comments?
   a) //   b) /*_____*/   c) */_____/*   d) /

Class 11ᵗʰ (Special Entry Test 2025)

Paper: Computer

Section-B (Marks =40)

Note; Attempt any eight questions. Each question has equal marks.

Q2 Define the following MS word window components.

    a) Title Bar   b) Status Bar

Q3 Differentiate between LAN and WAN.

Q4 Differentiate between analog signal and digital signal.

Q5 What is the reserved word? Explain with example.

Q6 Write down the properties of truth table.

Q7 Write down four uses of hyperlink in word document.

Q8 Write four example of word processing software.

Q9 Explain the flowchart symbols.

Q10 Explain comments and its types in C-Language

Q11 Write truth table of AND *gote and OR gote* also draw its block diagrams.

Time Allowed: 1hrs   Total Marks :50

ENGLISH –SECTION   Marks (25)

Q: 1 Write an Essay on any one of the following.   (10)

a. A Memorable Journey.
b. Merits and demerits of social Media.

Q: 2 Use the following pair of words in your own sentences.   (10)

a. Affect , Effect
b. Brake, Break
c. Desert, Dessert
d. Eligible, Illegible
e. Accept, Except

Q: 3 (a) Change the Voice of the following. (02)

(1) She laughs at him.
(2) He wrote a letter.

(b) Translate into English.   (03)

(1) اگر محنت کرو گے تو کامیاب ہو جاؤ گے ۔

(2) کل ہم لاہور جائیں گے ۔

(3) بابر اعظم نے اپنی 19 ویں سینچری سکور کی۔

URDU –SECTION   Marks (25)

سوال 1 : مندرجہ ذیل محاورات کو جملوں میں استعمال کریں۔(05)

پگڑی اچھالنا، آنکھیں نکالنا، خون میں ابال آنا، بغلیں جھانکنا، موم کی ناک ہونا

سوال 2 : جز (الف) اسم معرفہ کی تعریف کریں۔ نیز اس کی اقسام بھی بیان کریں۔-(05)

جز (ب) ذو معنی الفاظ سے کیا مراد ہے؟ کوئی سے تین ذو معنی الفاظ لکھ کر جملوں میں استعمال کریں۔-(05)

سوال 3: اخبار کے مدیر کے نام ٹریفک کی بد نظمی کی طرف توجہ دلانے کے لیے خط لکھیں۔(10)

Cadet College Wana (SWTD)

Class 11ᵗʰ (Special Entry Test 2025)

Paper Biology

Time Allowed: 1 hr   <u>Section –A (Marks: 10)</u>   Total Marks: 50

Q No. 1:- Encircle the correct option.

I. The largest part of the brain is
   a. hypothalamus   b. thalamus   c. cerebellum   d. cerebrum

II. which kingdom includes organisms with cell wall but without chlorophyll.
   a. Protista   b. Fungi   c. Plantae   d. Animalia

III. Cell membrane is made of.
   a. cellulose   b. proteins   c) lipid   d. lipid and protein

IV. Which kingdom includes organisms with chromosome without nucleus.
   a. Protista   b. Monera   c. Fungi   d. none of these

V. Change in environmental factors will affect enzymes activity and therefore may affect.
   a. Metabolism   b. Respiration   c. Digestion   d. All of them

VI. Which is not present in the filtrate entering the bowman's capsule of a nephron.
   a. water   b. Ca^+ c. Blood cells   d. Urea

VII. What is the possible genotype of the parents of homozygous recessive individuals.
   a. homozygous dominant   b. homozygous recessive
   c. heterozygous   d. b and c

VIII. The organelle involved in protein synthesis
   a. Ribosome   b. vacuole   c. Golgi body   d. Plastid

IX. Genes are the short segment of the.
   a. Proteins   b. DNA   c. Lipid   d. Carbohydrates

X. Glycogenesis takes place in liver stimulating by a Harmone.
   a. insulin   b. Glucagon   c. ADH   d. Thyroxin

Note: Attempt any 8 questions of the following. Each question carries 5 marks.

Q No:2.   Shortly define the process of Endocytosis and Exocytosis.

Q No:3   What are Enzymes? Write any four general characteristics of enzymes.

Q No:4   What are antibiotics? Describe its two types Bactericidal and Bacteriostatic.

Q No:5   Draw a label Diagram of kidney?

Q No:6   Write down four differences between prokaryotes and eukaryotes.

Q No:7   Describe the mechanism of photosynthesis.

Q No:8   Write down any five reasons for deforestation?

Q No:9   Discuss some importance of biodiversity?

Q No:10   Define Analgesic, antibiotic, painkillers and hallucinogen.

Q No:11   Draw a label diagram of female gametophyte in flowering plants?

Time allowed: 1hr.   **Section-A (Marks = 10)**   **Total Marks: 50**

Q1 Choose the correct option.

i. $log\sqrt{100} =$ _____

    a) ½   b) 2   c) 1   d) None of these

ii. Solution set of $\sqrt{x} = -5$;

    a) {25}   b) {-25}   c) {5}   d) { }

iii. The point $(x, -y)$ is located in _____ Quadrant.

    a) I   b) II   c) III   d) IV

iv. The third proportional of a and b is _____

    a) ab   b) $\frac{a}{b}$ c) $\frac{b^2}{a}$ d) None of these

v. The point $(-2. -3)$ lies in _____

    I   b) II   c) III   d) IV

vi. The Quadratic equation whose Roots are -8 and -4 is_____

    a) $x^2 + 12x + 32 = 0$ b) $x^2 - 12x + 32$ c) $x^2 + 12x - 32$ d) $x^2 - 12x - 32$

vii. The average of 45 and 75 with weight 2 and 4 respectively is _____

    a) 55   b) 60   c) 65   d) 70

viii. $\sqrt{-1} \times \sqrt{-1} =$ _____

    a) 1   b) i   c) -1   d) -i

ix. $sec^2 \theta$ is equal to _____

    a) $1 + tan^2 \theta$ b) $1 + Cot^2 \theta$ c) $1 - sin^2 \theta$ d) $1 - cos^2 \theta$

x. How many method by which we have to solve quadratic equation?

    a) 2   b) 1   c) 4   d) 3

Cadet College Wana (SWTD)

Class 11th (Special Entry Test 2025)

Paper Mathematics

Section-B (Marks =40)

Note; Attempt any eight questions. Each question has equal marks.

Q2 Solve $\sqrt{3x+2} + 6 = 2$

Q3 Find the value of k, if the roots of $x^2 - 8x + k = 0$ is differ by two

Q4 Find the area of sector of a circle, whose radius is 6m with central of 90^0

Q5 Solve the given equation $4.2^{2x} - 5.2^x + 1 = 0$

Q6 An arc of a circle of radius 6cm subtends an angle of 30^0 at its center. Find the length of the arc

Q7 Prove that the points $L(5,2), M(6,4) and N(7,10)$ are Collinear

Q8 Prove that $\frac{1+cos\theta}{sin\theta} = \frac{sin\theta}{1+cos\theta}$

Q9 Show that $\left(-1 + i\sqrt{3}\right)^2 + \left(-1 - i\sqrt{3}\right)^2 = 20w^2$

Q10 Form a Quadratic equation whose roots are 3 and 2

Q11 The angle of elevation of the top pole is 30^0 from a point on the ground 18cm away from its base.

Find the height of the pole.

Cadet College Wana (SWTD)

Class 11th (Special Entry Test 2025)

Paper Chemistry

Time Allowed: 1 hrs	Section – A	Total Marks: 50

QNo.1 Choose the correct option from the following.

i. 3.01×10^{23} molecules of CO_2 contain _____ moles.

  a) 1　　　　b) 0.5　　　　c) 10　　　　d) 5

ii. _____ is used for brain imaging

  a) Co^{60}　　　b) Na-24　　　c) C-14　　　d) I-123

iii. which of the following Sulphur does have and oxidation number of +7?

  a) HSO^-_3　　b) $SO_3c)$　　c) H_2SO_4　　　d) $H_2S_2O_7$

iv. Glycogen is an example of

  a) Fats　　　b) Carbohydrates　　c) Nucleic Acid　　d) Proteins

v. The chemical formula of Chile salt peter is

  a) $NaHCO_3$　　b) NaOH　　　c) $NaNO_3$　　　d) CaO

vi. Matte is a mixture of

  a) $CO + H_2$　　b) $C + H_2$　　　c) $CO + H_2O$　　d) $C + H_2O$

vii. Which one of the following is Lewis's base?

  a) HCl　　　b) $AlCl_3$　　　c) BF_3　　　d) F^-

viii. Catenation is linkage of carbon with other

  a) oxygen　　b) carbon　　c) nitrogen　　　d) Halogen

ix. In rust iron is present in the form of

  a) Fe^{+2}　　b) Fe^{+3}　　　c) Fe^{+1}　　　d) none of these

x. The lowest temperature of troposphere is

  a) -5°C　　　b) 5°C　　　c) 56°C　　　d) -56°C

Cadet College Wana (SWTD)

Class 11th (Special Entry Test 2025)

Paper Chemistry

Marks 8×5=40

Section B

Note: Attempt any 8 questions from the followings. Each question carries 5 marks.

Q No: 2 Draw neat and clean labelled diagram for dry cell along with cell reaction.

Q No: 3 What information is required to predict the direction of a chemical reaction.

Q No: 4 Compare the reactivity of alkane and alkene.

Q No: 5 How alkyl radicals are formed. Discuss it with examples.

Q No: 6 What is chemical bonding? Discuss the Ionic bond formation with suitable example?

Q No: 7 Define Electroplating? How Zinc deposit on another metal by electroplating.

Q No: 8 Define functional group? Explain with examples.

Q No: 9 Why boiling point decreases at height and how it effects cooking?

Q No: 10 What is enzyme and how it speeds up a chemical reaction.

Q No: 11 What is soft and hard water and how permanent hardness of water is removed.