

Atomic Energy Central School No. 4 Rawatbhata

Confidence Examination , 2017-18

Time : 3 Hrs

Class: XI, English

Max. Marks : 80

General Instructions

- 1) This question paper is divided into four sections-A, B, C, D & E
- 2) All sections are compulsory
- 3) Marks are indicated against each question
- 4) Strictly adhere to the given word limit
- 5) Write the question numbers carefully
- 6) Write your name, number, class & section on the right top corner of your question paper

**Q.1. Read the following passage carefully and answer the questions that follow. (8)**

It has been said that everyone lives by selling something. In the light of this statement, teachers live by selling knowledge, philosophers by selling wisdom and priests by selling spiritual comfort. Though it may be possible to measure the value of material goods in terms of money, it is extremely difficult to estimate the true value of the services which people perform for us. There are times when we would willingly give everything we possess to save our lives, yet we might grudge paying a surgeon a high fee for offering us precisely this service. The conditions of society are such that skills have to be paid for in the same way that goods are paid for at a shop. Everyone has something to sell.

Tramps seem to be the only exception to this general rule. Beggars almost sell themselves as human beings, to arouse the pity of passers – by. But real tramps are not beggars. They have nothing to sell and require nothing from others. In seeking independence, they do not sacrifice their human dignity. A tramp may seek you for money, but he will never ask you to feel sorry for him.

He has deliberately chosen to lead the life he leads and is fully aware of the consequences. He may never be sure where the next meal is coming from, but he is free from the thousands of anxieties which afflict other people. His few material possessions make it possible for him to move from place to place with ease. By having to sleep in the open, he gets far closer to the world of nature than most of us ever do. He may hunt, beg or steal occasionally to keep himself alive; he may even, in times of real need, do a little work, but he will never sacrifice his freedom. We often speak with contempt for tramps and put them in the same class as beggars, but how many of us can honestly say that we have not felt a little envious of their simple way of life and their freedom from care?

(a) On the basis of your reading of the above passage make notes on it, using headings and sub – headings. Use recognizable abbreviations wherever necessary (minimum 4) .Supply an appropriate title to it. (5)

(b) Write a summary of the above passage in about 80 words. (3)

**Q.2. Read the poem given below and answer the questions that follow. (12)**

The most important thing we've learned,  
So far as children are concerned,  
Is never, never, never let  
Them near your television set  
Or better still, just don't install  
The idiotic thing at all.  
In almost every house we've been,  
We've watched them gaping at the screen.

They loll and slop and lounge about,  
 And stare until their eyes pop out.  
 (Last week in someone's place we saw a dozen eyeballs on the floor.)  
 They sit and stare and stare and sit  
 Until they're hypnotised by it,  
 Until they're absolutely drunk  
 With all that shocking ghastly junk.  
 Oh yes, we know it keeps them still,  
 They don't climb out the window sill,  
 They never fight or kick or punch,  
 They leave you free to cook the lunch  
 And wash the dishes in the sink  
 But did you ever stop to think,  
 To wonder just exactly what  
 This does to your beloved tot?  
 It rots the sense in the head!  
 It kills imagination dead!  
 It clogs and clutters up the mind!  
 It makes a child so dull and blind  
 He can no longer understand  
 A fantasy, fairyland!  
 His brain becomes as soft as cheese!  
 His powers of thinking rust and freeze!  
 He cannot think - - he only sees!

On the basis of your reading of the above poem, answer the following questions by choosing the correct option. **(1x6=6)**

- (i) How do children behave while watching TV?  
 (a) They are hypnotised (b) They eat a lot (c) They are happy (d) They are sad
- (ii) Why shouldn't one install TV?  
 (a) It is hypnotising (b) It is an idiotic thing (c) It spoils the children's mind (d) It has a big screen
- (iii) How are the parents relieved?  
 (a) Children watch TV (b) Parents get time to do household work (c) Children get absolutely drunk (d) Parents don't fight
- (iv) Why can't a child understand fantasy and fairyland?  
 (a) He is glued to TV (b) His parents are busy doing household work (c) TV spoils their mind and imagination (d) Both 'a' & 'b'
- (v) What is the meaning of the phrase 'ghastly junk'?  
 (a) The idiotic box (b) The garbage (c) Household work (d) Programmes on TV
- (vi) The antonym of the word 'gaping' is .....
- (a) closed (b) great (c) yawning (d) broad

(a) Answer the following questions and complete the above statements. **(1x6=6)**

- (i) In your opinion, is the poet right in saying what he says? Why?
- (ii) What is the tone of the poet when he uses the capital letters in the last lines?
- (iii) What are the undesirable consequences of watching television?
- (iv) How does television become a harmful addiction for children?

- (v) The word in the poem, which is a synonym of 'mesmerised' is .....
- (vi) The word ..... in the poem is a synonym of the word 'choke'.

**Section – B – Writing Tasks**

**(25 Marks)**

**III)** Your school, recently in January 2018, had participated in the All India Inter AECS Debate Competition which was held at Mumbai. Your college bagged the first position among all Schools/Junior Colleges at Senior Level. Write a report in about 80 to 100 words on the event to be published in your school magazine.

OR

Having understood the importance of cleanliness and hygiene you wish to make the residents your colony aware of the same. On the eve of Republic Day Celebration most of the residents shall come to witness the programme at your school campus. This is the best opportunity for you to motivate them. Prepare a Poster on cleanliness and hygiene to display and to gain wide publicity. **(05)**

**IV)** There is an increase in the anti-social activities like theft, robbery, chain-snatching, etc. in your area. You are Mr./Ms. Kamal/Kamala Dogra of Om Apartments, Savitridevi Nagar, Near Railway Station, Jaipur. You have reported the matter to the police; but not much has been done so far. In order to bring this problem to the notice of the authorities and to gain publicity, you wish to write a letter to the Editor of The Times of India, Annex Building, High Court Road, Jaipur.

OR

You are Mr/Mrs. Mukesh/Monika Singh who resides at Shankar Mahadevan Apartments, Flat no. 702, Nehru Nagar, Chittorgarh. You had purchased some books on 20/2/2018 on Science and Technology from Vikas Books Store, Ranchi Main Road, Aero Drum Circle, Kota. When you were delivered a parcel of books the next day, you noticed that the books were not the same you had ordered. Write a letter to the Books Store owner about the wrong delivery and ask him to send you the books you had selected and paid for. **(10)**

**V)** As a concerned citizen of the country you have your opinion on certain issues. The youth of today is qualified but does not have enough opportunity of employment. For just one post in a department thousands of applications are received. This situation troubles you a lot. Write an Article on **“Unemployment a Big Issue in India”**.

OR

Terrorism is one of the hurdles in the development of our country. There is an atmosphere of insecurity all over and in every part of our country. This evil must be curbed. As a concerned citizen, you may express your opinion on **“Terrorism must be Uprooted”**. **(10)**

**Section-C-Grammar**

**(5 Marks)**

**VI) Rewrite as directed**

1. Change into a Simple Sentence

1

Though Ashish was informed about the consequences for his misconduct, he committed the same mistake.

2. Fill in the blanks with suitable Form of the Verbs in the brackets:

1

As Rita ..... (see) Urmila, she ..... (inform) her that she ..... (leave) the town the next day in the morning and ..... (return) by the evening.

3. Fill in the blanks with suitable Articles:

1

Soya beans belong to \_\_\_ legume family. The beans are \_\_\_\_ seeds of the leguminous soybean plant. They can be grown on \_\_\_\_ variety of soils and in \_\_\_ wide range of climate.

4. Use a Suitable Modal: 1

Indian will win the match. (Rewrite the sentence making it the least probable one)

5. Rearrange the words given below into a meaningful sentence: 1

(For/useful/personal/own/note-making/one's/own/is/reference/and/benefit.)

**Section – D – Literature (Textual Questions) (25)**

**VII ) Read the lines given below and answer the questions that follow: (05)**

Father and son, we both must live

On the same globe and the same land.

He speaks: I cannot understand

Myself, why anger grows from grief.

We each put out an empty hand,

Longing for something to forgive.

i) What is the father's ultimate wish? 1

ii) What does the poet mean by the line, "we both must live on the same globe and the same land"? 2

iii) Explain in your words the father and son relationship in the poem. 2

**VIII ) Answer the following in about 30 to 40 words each: (10)**

a) How, according to you, can peace and liberty be maintained in a state? (The Tale of Melon City)

b) Narrate the mental-suffering of Aram in short. (The Summer of the Beautiful White Horse)

c) Why did the narrator want to forget the address? (The Address)

d) "I have done something; oh, God! I've done something real at last." Why does Andrew say this? (Birth)

e) Describe the nature of Khushwant Singh's grandmother in a few words. (The Portrait of a Lady)  
(5 X 2 = 10)

**IX ) Answer the following questions in not more than 150 words each: (10)**

1) What do you understand of Einstein's nature from his conversations with his history teacher, his mathematics teacher and the head teacher?

OR

Write your opinion on the attitude shown by Taplow towards Crocker-Harris. (5)

2) What issues/problems the play: Mother's Day raise. Discuss.

OR

Comment on the influence of English – the language and the way of life – on Indian life as reflected in the story: Ranga's Marriage (5)

**Section – E – Long Reading Text – Novel (05)**

**X) Answer the following questions in not more than 150 words:**

1) How does Verginia help in saving the soul of Sir Simon? Explain in detail.

OR

Give a detailed description of the twins troubling and frightening the ghost. (5)

## General Instructions

- All the questions are compulsory.
- There are 26 questions in total.
- Questions 1 to 5 are very short answer type questions of 1 mark each.
- Questions 6 to 10 carry two marks each.
- Questions 11 to 22 carry three marks each.
- Question 23 is value based questions carry four marks.
- Questions 24 to 26 carries five marks each.
- There is no overall choice. However, an internal choice has been provided in three questions in 5 marks question. You have to attempt only 1 of the choices in such questions.
- Use of calculators is not permitted. However, you may use log tables if necessary.

- The mass and diameter of planet are twice those of earth. What will be acceleration due to gravity at the planet, if acceleration due to gravity on the earth is 'g'?
- Explain why sound travels faster in warm air than cool air?
- Two identical springs of force constant k each are connected in series. What will be the equivalent spring constant?
- Using the principle of homogeneity of dimensions, find which of the following is correct:  
(i)  $T^2=4\pi r^2$       (ii)  $T^2=4\pi^2 r^3/GM$
- The velocities of three molecules are  $3v$ ,  $4v$  and  $5v$ . Determine the root mean square velocity.
- A particle of mass  $0.5\text{kg}$  travels in straight line with velocity  $v=5x^{3/2}$ . What is the work done by the net force during its displacement from  $x=0$  to  $x=2\text{m}$ .
- A body is projected at an angle of  $45^\circ$  with a velocity of  $9.8\text{ m/s}$ . What will be its horizontal range?
- State law of conservation of momentum and prove it by using third law of motion.
- If  $|\vec{A} + \vec{B}| = |\vec{A} - \vec{B}|$ , what is the angle between  $\vec{A}$  and  $\vec{B}$ ?
- Define angular acceleration. Deduce its relation with linear acceleration.
- State and prove the theorem of perpendicular axes. Derive an expression for the moment of inertia of a thin uniform circular ring about its diameter.
- Applying the first law of thermodynamics, obtain the relation between the specific heats of gas. Explain why  $C_p$  is greater than  $C_v$ ?
- A physical quantity X is given by:  $X=(P^2Q^{3/2})/(R^4S^{1/2})$       The percentage errors in P,Q,R and S are 1%, 2% 4% and 2%. Calculate the percentage error in X.
- Explain what happens when the load on a metal wire suspended from a rigid support is gradually increased. Illustrate your answer with a suitable stress-strain graph.

15. Two ball bearings of mass  $m$  each moving in opposite directions with equal speeds  $v$  collide head on with each other. Predict the outcome of the collision, assuming it to be perfectly elastic.
16. Define radius of gyration of a body rotating about an axis. Derive an expression for it. On what factors does it depend?
17. Deduce Graham's law of diffusion from kinetic theory of gases using expression for pressure.
18. Define Poisson's ratio. Write an expression for it. What is the significance of negative sign in this expression?
19. Determine the angle of banking so as to minimize the wear and tear of the tyres of a car negotiating a banked curve.
20. Show that total energy of the stretched spring remains conserved when it is released. Find the expression for maximum speed.
21. Three masses 3, 4 and 5 kg are located at the corners of an equilateral triangle of side 1m. Locate the centre of mass of the system.
22. State Bernoulli's principle for the flow of non-viscous fluids. Using this principle derive Toricelli's law.
23. Once an NCC camp was organized near Jammu. The cadets were being trained for march-past. All of a sudden the cadets came near a bridge. On seeing this, their incharge immediately stopped them from marching on the bridge. The cadets were first surprised to see this but later on the incharge explained them the reason for doing so.
  - a.) What values do you attribute to incharge?
  - b.) Why are army troops not allowed to march in steps while crossing a bridge?
24. State Stokes' law. Deduce Stokes' law on the basis of dimensional considerations. Derive an expression for the Terminal velocity of a small spherical body falling through a viscous medium.

OR

What is the phenomenon of capillarity? Derive the expression for the rise of liquid in a capillary tube. What will happen if the length of the capillary tube is smaller than the height to which the liquid rises? Explain briefly.

25. Discuss Newton's formula for the velocity of waves. What correction was applied by Laplace and why?

OR

What is Doppler Effect? Derive an expression for the apparent frequency when source and listener of sound is moving towards each other. A policeman on duty detects a drop of 15% in the pitch of the horn of a motor car as it crosses him. Calculate the speed of car, if the velocity of sound is 330m/s.

26. Describe the operation of a Carnot's engine. Calculate the efficiency for it.

OR

State First law of Thermodynamics. Applying first law of thermodynamics, obtain an adiabatic relation between pressure and volume. Hence derive an expression for the work done during the adiabatic expansion of an ideal gas.

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Atomic Energy Central School No. 4, Rawatbhata  
Confidence Examination (2017-2018)

Time- 3 Hrs

Class- XI, Chemistry

M.M- 70

Name of the Student \_\_\_\_\_ Roll No. \_\_\_\_\_ Class \_\_\_\_\_

Note-

- (i) Attempt all the questions.
- (ii) Q 1 to 5 are very short – answer questions and carry 1 mark each.
- (iii) Q 6 to 10 are short – answer questions and carry 2 marks each.
- (iv) Q 11 to 22 are also short – answer questions and carry 3 marks each.
- (v) Q 23 is value based question and carry 4 marks.
- (vi) Q 24 to 26 are long – answer questions and carry 5 marks each.

- |   |   |
|---|---|
| 1. What is critical temperature?  | 1 |
| 2. Find the group & period for an element whose outer configuration is $4s^2 3d^2$ ?  | 1 |
| 3. Draw the structure of Diamond?   | 1 |
| 4. What is electrochemical cell ?   | 1 |
| 5. What is the role of a chemical 'cisPlatin' in human body?  | 1 |
| 6. Write IUPAC name of following organic compounds-   | 2 |
| (i). $(CH_3)_2C=CHCH_3$   |   |
| (ii). $CH_3COCH_2CH_2COOH$  |   |
| 7. Balance the redox reaction $Cr_2O_7^{2-} + SO_3^{2-} + H^+ \rightarrow Cr^{3+} + SO_4^{2-}$ by ion-electron method .   | 2 |
| 8. 0.3780g of an organic chloro compound gave 0.5740g of silver chloride in Carius estimation. Calculate the percentage of chlorine present in the compound.<br>(Atomic mass of Ag = 108 u, Cl = 35.5u) | 2 |
| 9. Define the following-  | 2 |
| (i). Volume strength of $H_2O_2$ .      (ii). Hardening of vegetable oils   |   |
| OR  |   |
| Write a short note on storage of $H_2O_2$ .   |   |
| 10. At 450 K, $K_p = 2.0 \times 10^{10} \text{ bar}^{-1}$ for the given reaction at equilibrium:  | 2 |
| $2SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$ . What is the value $K_c$ at this temperature?<br>( $R = 0.083 \text{ dm}^3 \text{ bar K}^{-1} \text{ mol}^{-1}$ )   |   |
| 11. (i). What is meant by term limiting reagent in a chemical reaction?   |   |
| (ii). State and explain law of accuracy and precision.  | 3 |

12. (i) Write electronic configuration of  $\text{Cu}^+$  ion ( $Z$  of  $\text{Cu} = 29$ ).
- (ii) Write the values of 'l' and 'm<sub>l</sub>' for  $3d^5$  electron.
- (iii) What is photoelectric effect? Write mathematical expression also. 3
13. State Heisenberg uncertainty principle. Calculate uncertainty in position of a dust particle with mass equal to 1mg if uncertainty in its velocity is  $5.5 \times 10^{-20} \text{ ms}^{-1}$ . 3
14. Explain ionization enthalpy and Explain why (i). Be has higher value of  $\Delta_i H$  than B. 3
- (ii). O has lower value of  $\Delta_i H$  than N and F?
- (OR)
- Explain electron gain enthalpy. Which of the following pairs of elements would have a more negative electron gain enthalpy? (i). O or F (ii). F or Cl
- Also state out electronegativity.
15. (i) Calculate the total pressure in a mixture of 8.0g of  $\text{O}_2$  and 4.0g of  $\text{H}_2$  confined in a vessel of  $1 \text{ dm}^3$  at  $27^\circ\text{C}$  ( $R = 0.083 \text{ bar dm}^3 \text{ K}^{-1} \text{ mol}^{-1}$ ).
- (ii) Define aqueous tension. 3
16. (i). What do you mean by entropy of a system?
- (ii). Derive the relation between  $\Delta H$  and  $\Delta U$  for a gaseous reaction. 3
17. For a reaction  $2A + B \rightarrow C$ , at  $298\text{K}$   $\Delta H = 400 \text{ kJ mol}^{-1}$  and  $\Delta S = 0.2 \text{ kJ K}^{-1} \text{ mol}^{-1}$ .
- At what temperature will the reaction become spontaneous considering  $\Delta H$  and  $\Delta S$  to be constant over the temperature range? 3
18. (i) What do you mean by Biochemical Oxygen Demand (BOD)?
- (ii) What is photochemical smog?
- (iii) What is meant by green chemistry? 3
19. Explain: 3
- (i) Boron is unable to form  $\text{BF}_6^{3-}$  ion.
- (ii)  $[\text{SiF}_6]^{2-}$  is known whereas  $[\text{SiCl}_6]^{2-}$  not known.
- (iii) Conc.  $\text{HNO}_3$  can be stored in aluminum container.
20. (i) What do you mean by Borax Bead Test? 3
- (ii) How does diborane react with ammonia?
- (iii) Draw the structure of diborane.
21. (i) Write the functional isomer of  $\text{CH}_3\text{CH}_2\text{OH}$ .
- (ii) Write notes on a) Inductive effect b) Resonance effect 3
22. (i) Write Friedel craft acylation and alkylation reaction.
- (ii) What are conformations? Draw the conformations of ethane. 3
23. In group III, the cations Fe, Cr and Al are precipitated as hydroxides by the addition of  $\text{NH}_4\text{OH}$  to the aqueous solution of the mixture. But a small amount of  $\text{NH}_4\text{Cl}$  is added before the addition of  $\text{NH}_4\text{OH}$ .



Arvinder was confused to see why common  $\text{NH}_4^+$  ion is added? He asked his friend Palvinder the purpose of adding common  $\text{NH}_4^+$  ion. Palvinder explained the purpose of adding  $\text{NH}_4\text{Cl}$  and then Arvinder got satisfied.

(a) What would be the answer of Palvinder. (b) Why magnesium is not precipitated from a solution of its salt by  $\text{NH}_4\text{OH}$  in the presence of  $\text{NH}_4\text{Cl}$ . (c) What values are shown by Palvinder?

4

24. (i) What is dipole moment? Draw resonating structures of carbonate ion.

(ii) Write MO configuration of  $\text{O}_2$  molecule. Calculate its bond order and write its magnetic nature.

2+3

(OR)

(i) What is hydrogen bond? Explain the different types of H-bond with suitable examples.

(ii) What is hybridization? Explain the geometry of  $\text{C}_2\text{H}_2$  molecule with the help of hybridization.

25. (i) Explain behaviour of reaction of alkali metals with ammonia?

(ii) Explain the preparation of sodium carbonate by Solvay process. Write the reactions involved in this process.

2+3

(OR)

(i) Explain behaviour of reaction of alkali metals with air?

(ii) Explain the preparation of sodium caustic soda. Write the reactions involved in this process. What is POP?

26. a. Write mechanism of Markovnikov's addition. 2

b. Write chemical reactions (two) for test of unsaturation. 1

c. Convert ethyne into toluene. 1

d. What happens when but-2-ene is reacted with ozone and further treated with  $\text{Zn}/\text{H}_2\text{O}$ ? Write chemical reaction involved. 1

(OR)

a. Write mechanism of Anti-Markovnikov's rule. 2

b. Write chemical test for ethyne and ethene. 1

c. Convert methyl bromide into butane. 1

d. What happens when benzene is heated with chlorine in UV light? 1

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Atomic Energy Central School No.4 Rawatbhata

Confidence Examination (2017-18)

Time: 3 hour

Class XI, Mathematics

MM: 100

Name of the Student \_\_\_\_\_ Roll No. \_\_\_\_\_ Class \_\_\_\_\_

General Instructions:

- (i) All questions are compulsory.
- (ii) The question paper consists of 29 questions divided into four sections A, B and C. D Section A comprises of 4 questions of one mark each, section B comprises of 8 questions of 2 marks each and section C comprises of 11 questions of 4 marks each. And Section D comprises of 6 questions of six marks each.
- (iii) All questions in section A are to be answered in one word, one sentence or as per the exact requirement of the question.
- (iv) There is no overall choice. However internal choice has been provided in 4 questions of four marks each and 2 questions of six marks each. You have to attempt only one of the alternatives in all such questions.
- (v) Use of calculator is not permitted.

SECTION A ( 1× 4 = 4)

1. Write the interval [6, 12] in the set builder form
2. Find the 6th term in the expansions of  $(2x - y)^{12}$
3. Find the length of latus rectum ellipse  $\frac{x^2}{49} + \frac{y^2}{36} = 1$
4. A coin is tossed twice what is the probability that at least one head occurs?

SECTION B ( 2× 8 = 16)

5. Solve the following trigonometric equation:  $\tan 2x = \sqrt{3}$
6. Prove that :  $\cos 4x = 1 - 8 \sin^2 x \cos^2 x$ .
7. Reduce the following equation into intercept form and find the intercepts on the axes :  $4x - 3y = 6$
8. Find the equation of the line passing through the point (3, 0) and perpendicular to the line  $x - 7y + 5 = 0$ .
9. Find the equation of the line whose perpendicular distance from the origin is 5 units and angle made by the perpendicular with positive axis is  $30^\circ$  .
10. Find the multiplicative inverse of following complex number  $4 - 3i$
11. Write the contra-positive of the following statements:

(i) If  $x$  is prime number, then  $x$  is odd.

(ii) If 2 lines are parallel then they don't intersect in the same plane.

12. Write the negation of the following statements :

(i)  $\pi$  is not a rational number.

(ii) Zero is a positive number.

SECTION C (  $4 \times 11 = 44$  )

13. Find the equation of the hyperbola whose foci are  $(3\sqrt{5}, 0)$  and length of latus rectum is 8.

OR

Find the equation of the circle with radius 5 whose centre lies on x-axis and passes through the point (2, 3).

14. Find the derivative of  $\cot x$  with respect to  $x$  from first principle.

OR

Evaluate :  $\lim_{x \rightarrow 0} f(x)$  where  $f(x) = \begin{cases} \frac{|x|}{x}, & \text{if } x \neq 0 \\ 0, & \text{if } x = 0 \end{cases}$

15. Find the co-ordinates of a point on y-axis which is at a distance of  $5\sqrt{2}$  from the point  $R(3, -2, 5)$

16. Find the square root of  $-15 - 8i$ .

OR

Convert the complex number  $\frac{1+3i}{1-2i}$  in polar form.

17. In how many of the distinct permutations of the letters in MISSISSIPPI do four I's not come together?

OR

How many words or without meaning can be formed with letters of the word EQUATION at a time so that vowels and consonants occur together ?

18. In an examination, a question paper consists of 12 questions divided into two parts i.e., Part I and Part II containing 5 and 7 questions respectively A student is required to attempt 8 questions all, selecting at least 3 from each part. In how many ways can a student select the questions? Write one importance of examination.

19. In the binomial expansion of  $(1 + x)^n$ . the coefficient of the 5th, 6th, and 7th terms are in A.P. Find all the value of  $n$  for which this can happen.

20. Find the domain and range of the real function  $\frac{1}{1-x^2}$

21. The function  $f$  is defined by  $f(x) = \begin{cases} 1 - x, & \text{if } x < 0 \\ 1, & \text{if } x = 0 \\ 1 + x, & \text{if } x > 0 \end{cases}$

Draw the graph of  $f(x)$  and write domain and range.

22. If  $\tan A - \tan B = x$ ,  $\cot B - \cot A = y$

Prove that :  $\cot(A - B) = \frac{1}{x} + \frac{1}{y}$

23. In a class of 60 students, 30 opted of NCC, 32 opted for NSS and 24 opted for both NCC and NSS. If one of these students is selected at random, find the probability that

(i) the student opted for NCC or NSS.

(ii) the student has opted NSS but not NCC.

SECTION D ( 6× 6 = 36)

24. Prove the following by using the principle of mathematical induction,  $3^{2n+2} - 8n - 9$  is divisible by 8 for all  $n \in \mathbb{N}$

25. Solve the following system of inequalities graphically :

$$x + y \leq 4, y \leq 3, x + 5y \geq 4, 6x + 2y \geq 8, x \geq 0, y \geq 0$$

26. The ratio of the A.M and G. M of two positive numbers a and b be  $m : n$  ( $m > n$ ). Show that  $a:b = (m + \sqrt{m^2 - n^2}) : (m - \sqrt{m^2 - n^2})$

27. Prove that  $\cos^2 A + \cos^2 \left( A + \frac{2\pi}{3} \right) + \cos^2 \left( A - \frac{2\pi}{3} \right) = \frac{3}{2}$

28. In a survey it was found that 21 people like product A, 26 people like product B and 29 like product C. If 14 people like product A and B. 15 people like product B and C. 12 people like product C and A and 8 people like all three products, find :

(i) How many people like a least one of the products?

(ii) How many people like product C only?

29. Find the mean variance & standard deviation for the following Data

C.I.	0-10	10-20	20-30	30-40	40-50
Frequency	5	8	15	16	6

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Atomic Energy Central School No.4 Rawatbhata  
Confidence Examination (2017-18)

Time: 3 hour

Class XI, Biology

MM: 70

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General Instructions :

- (i) All Questions are compulsory.
- (ii) The question paper is consist of five section A, B, C, D & E.
- (iii) Section A contains 5 questions each of 1 marks, Section-B contains 5 questions each of 2 marks, Section-C contains 12 questions each of 3 marks, Section-D contains 1 question of 4 marks and Section-E contains 3 questions each of 5 marks.
- (iv) There is not over all choice. However an internal choice has been provided in oe question of two marks. 1 question of 3 mark and in all 3 questions of 5 marks.

---

Section A

1. In Biological classification of Animals write the name of 'family' and 'order' to which man belong.
2. When stamens are called epiphyllous.
3. Name the cells that surround vascular bcendles in dicot leaf.
4. Name the monomers which are linked by (a) peptide bond, (b) glycosidic bond to make their polymers. What is the shape of gaurd cell in (a) Moncot leaf and (b) dicot leaf.

Section B

6. Name the class of algae to which Laminaria belong. Draw labelled diagram of Laminaria showing its holdfast, stipe and frond.
7. Name the class of fungi to which Mucor and Rhizopus belong. Write 3 special features of this class in terms of habitat mode of nutrition and mycelium.
8. Write three important features of cartilagenous fish and bony fish. Also give one examples of each of these.
9. Draw labelled diagram of alimentary canal of cockroach and write the role haepetic coeca and malpighian tubales in it.
10. Write structure, function and location of compouned epithelium in Animals.

Or

Write structure of Parenchyma in plant. Write the location and function of this tissue.

Section C

11. Write six special features of flowers having floral formula  $Br P(3) + (3) A3+3 G(3)$ .
12. Write 3 main anatomical difference in Monocot and Dicot stem.
13. What are chromosomes & where these exist in cell. Classify the chromosomes based on the position of centromere. Also show these chromosomes by diagrams.
14. What are three different factors which affect enzyme activity. Explain and show their effect by labelled diagram.
15. Along with labelled diagram explain special features of metaphase of mitosis.

16. What do you mean by Isotonic, hypotonic and hypertonic solution with respect to cytoplasm of a cell? What will happen to a cell when it is placed in (a) isotonic solution (b) hypotonic solution (c) hypertonic solution?

17. Write and explain 3 physical properties of water that help in rise of water from root to top of plants. Write the effect/role of these properties in water.

18. What are three different criteria for essentiality of nutrients for plants. Explain each.

19. Name two plant hormones which are said to be antagonistic in their function. Write role of these plant hormones.

20. What are three main digestive glands associated with human alimentary canal?

Show these by labelled diagram. Write one important role of each gland.

21. How are respiratory gases O<sub>2</sub> & CO<sub>2</sub> transported by blood between lungs and tissues of body? Explain.

22. What is Lymph? How is it formed? Write two main differences between blood plasma and lymph.

Or

What are components of Malpighian body in a nephron? Show these by labelled diagram and write its role.

#### Section D

23. Amit met an accident while crossing the road with his friend Asif and Joseph. He was hospitalized and his parents were informed. After testing the Amit's blood groups Doctor asked Amit's parents to arrange blood of AB-ve groups. Asif offered himself to donate blood to Amit. But Amit's parents hesitated. Joseph made agree to Amit's parents and Asif donated blood to Amit to save his life.

Answer these :

1. Why did Amit's parents hesitate to take blood from Asif.
2. How did Joseph make agree to Amit's parent.
3. Write two life skills of Joseph.

#### Section E

24. What do you mean by light reaction and dark reaction that occur during a photosynthesis? Where the reactions happen in chloroplast? Explain the role of these reactions in photosynthesis.

Or

Define Glycolysis. Is this initial and essential process for aerobic, an aerobic respiration and fermentation. Explain the steps of glycolysis only by flow diagram.

25. Draw a labelled diagram of cell cycle showing its different phases. And explain G<sub>1</sub>, S and S<sub>2</sub> phase of cell cycle.

Or

Answer the following questions :

- (a) What are components of a polynucleotide.
- (b) Lipids have molecular weight less than 800 Dalton yet these are put in category of macromolecules. Why?

(c) Write name and structural formula of an amino acid and nucleotide.

(d) Write names of two autonomous body of a cell and their function.

26. Draw a labelled diagram of internal structure of human eye and write role of each part (minimum 8 points).

Or

What do you mean by endocrine glands? Write location and function of each endocrine gland in humans.

-----

Atomic Energy Central School No-4, Rawatbhata

Confidence Examination, 2017-18

Time: 3 hours

Class: XI, Computer Science

MM: 70

**Instructions:**

- i) Some questions are having OR options, choose only one and write specifically the option selected, in the answer sheet.
- ii) Please check that this question paper contains 5 questions in 4 pages.
- iii) Please write down the proper serial number of the question before attempting in the Answer Sheet.

- Q.No. [2]
1. (a) Express the advantages and limitation of IV Generation computers. [2]  
(b) Write a short note on Memory Management of operating system. [2]  
(c) Compare SRAM and DRAM? [1]  
(d) Name some inventions who helped in design of modern digital computers? [2]  
(e) What is the role of Operating System in computer system? Name the types of Operating Systems. [2]  
(f) Give the Classification of C++ Data Types, with examples.
- Q.No. (a) Give the output for the following: (Ignore the header file etc.)
2. (i) #include<iostream.h> [2]  
void main()  
{ int number = 75, r = 0;  
r += number ++ / 5;  
int a = ++r + ++number;  
number = ++a - r--;  
int m = 2 \* a + 3 \* r;  
cout << a << "\t" << r << "\t" << m << "\t" << number << endl;  
}  
(ii) for(int i = 11 ; i >= 1 ; i - = 2 ) [1]  
{ for(int j = 1; j <= i ; j + = 2)  
cout << i << " ";  
cout << "\n";  
}  
(iii) char s1[] = {"ICC Cup-2018!!"}; [2]  
int total = 0, d = 0, e = 0;



```

for(int i = 0; s1[i]!='\0' ; ++i)
    if(isalnum(s1[i]) )
        total ++;
    else if(ispunct(s1[i]) )
        d++;
    else
        e++;
cout<< "Total=" << total<<"Punct = "<<d<<"Oth= "<<e<<endl;

```

(iv) #include<iostream.h>

[2]

```

void exch (int& x, int y)

```

```

{ int Temp= x;

```

```

x = ++y + Temp;

```

```

y= Temp + --x ;

```

```

}

```

```

void main()

```

```

{ int a=50,b=20;

```

```

cout<<a<<" "<<b<<endl;

```

```

exch(a,b);

```

```

cout<<a<<" "<<b<<endl;

```

```

}

```

(b) Rewrite the following program after removing all errors, make underline each

[2]

correction.

```

#include<iostream.h>

```

```

void main();

```

```

{ int x

```

```

cin>>x>>y;

```

```

z= POW(x,y);

```

```

cout<<z

```

```

getch():

```

```

}

```

(c) Define the scope and life time of all the variables declared in the following program:

[2]

```

int x;

```

```

int main()

```

```

{ int a;

```

```

void check(int);
check(a);
}
void check(int m)
{int p;
}

```

(d) Mark/Write the precedence order or priority number for each operator present in the following expression, according to the C++ operators' precedence order: [2]

$X * (a - b) + c * d \% e$

(e) Write the output of the following statements:

(i)  $-4 \ || \ 0 \ \&\& \ (0 \ || \ -1) \ \&\& \ 1$  [2]

(ii)  $(5 != 5) ? a = b * a : (5 / 2 == 2) ? b = b - a : b = a;$

Q.No. Solve the following Questions using C++:

3. (a) Define all type of operators used in C++, in brief? [3]

(b) Differentiate between keyword and identifier, with example. [2]

(c) Define the use of comment line, explain with syntax & examples? [2]

(d) Write a short not on any one of the following: [2]

(i) Switch statement (ii) Page memory (iii) Structure

(e) Explain the type of errors occur in C++ programs? [2]

(f) Write some guide lines to develop a computer program and State some characteristics of a good program. [4]

(g) Draw a flow chart to find greater number between 2 numbers? [2]

Q.No. Write programs in C++ for the followings:

4. (a) Enter the purchase amount and calculate the discount, if PA is  $\geq 5000$  then discount is [2]

7.5% otherwise 5%. Calculate the net amount=PA-Discout. Display the details at output. [3]

(b) Enter 4 numbers and display the largest number? [3]

(c) Enter two numbers and calculate +, -, \*, / operations using a menu driven program. The user has to give a desired choice of the type of operation to be performed.

**OR** [3]

Display the Fibonacci series up to 10 terms.

(d) Print the sum of series:  $1 - x + x^2/2 - x^3/3 + \dots + x^n/n$

**OR**

Print the following pattern:

#

\$\$

###

\$\$\$\$

[5]

#####

(e) Enter 10 numbers in an array and update the array elements by using a separate function `Modify()`, which will replace all zeros by 2 and replace all odd numbers by 5 and subtract 2 in all even elements. Display the array after modification.

i.e. if array contains: 8 4 7 9 0 16 19 0 26 31

then after modify: 6 2 5 5 2 14 5 2 24 5

OR

[4]

Enter 10 numbers in an array and find the max. (Largest) and min (Smallest) element present in array by using a separate function `MMinx()`. The function should display the numbers with their positions in the array.

[3]

(f) Define a structure *Item* with elements id, Name and Price. Enter 3 variables of Item type and print the Record of item having Max. Price.

OR

Enter a 2-d matrix of 3x4 order and display the sum of each row.

(g) Enter a string and count the letters in lower case in the string, by using a separate function `CountL()`.

OR

Enter a string and pass it to a function called `Vowel()`, which will count the number of vowels present in the string and display() at output.

Q.No. Convert the following numbers into another bases:

[4]

5.

(i)  $(64.13)_8 = ( ? )_{10}$

(ii)  $(101010.011)_2 = ( ? )_8$

(iii)  $(D5.9A)_{16} = ( ? )_2$

(iv)  $(1100.5)_{10} = ( ? )_{16}$

-----

खंड (क)

प्र० 1 निम्नलिखित अपठित काव्यांश को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के उत्तर लिखिए।

बाजार ने, विज्ञापन ने हिंदी को एक क्रांतिकारी रूप दिया है, जिसमें रवानगी है, स्वाद है रोमांच है। आज की सबसे बड़ी चाहत का अकूत संसार है। इस तरह हिंदी भविष्य की भाषा, समय का तकाजा और रोजगार की जरूरत बनती जा रही है। लोकतंत्र का चौथा स्तंभ पत्रकारिता है। सूचना क्रांति ने विश्व को ग्राम बना दिया है। मीडिया की जागरूकता ने समाज में एक क्रांति ला दी है और इस क्रांति की भाषा हिंदी है। इतने सारे समाचार चैनल है और सभी चैनलों पर हिंदी अपने हर रूप में नए कलेवर, तेवर में निखर कर, सँवर कर, लहर कर, ' बोले तो बिंदास बन कर छाई रहती है '। तुलनात्मक अर्थों में आज अंग्रेजी पत्रकारिता का मूल्य, बाजार, उत्पादन उपभोग और वितरण बहुत बड़ा है।

प्रिंट मीडिया की स्थिति ज्यादा बेहतर है। पत्र पत्रिकाओं की लाखों प्रतियाँ रोजाना बिकती है। चीन के बाद सबसे अधिक अखबार हमारे यहाँ पढ़े जाते हैं हिंदी के संप्रेषण की यह मानवीय, रचनात्मक और सारगर्भित उपलब्धि है। पत्र पत्रिकाएँ हिंदी की गुणवत्ता और प्रचार प्रसार के लिए कृतसंकल्प है। यह भ्रम फैलाया गया था कि हिंदी रोजगारोन्मुख नहीं है। आज सरकारी गैर- सरकारी क्षेत्रों में करोड़ों पढ़े लिखे लोग आजीविका कमा रहे हैं। भविष्य में भी हिंदी का बाजार- माँग और अधिक होगा।

- क) लोकतंत्र का चौथा स्तंभ किसे कहा गया है और क्यों ? 2
- ख) तुलनात्मक दृष्टि से हिंदी और अंग्रेजी पत्रकारिता में लेखक ने किसे व्यापक माना है 2
- ग) प्रिंट मीडिया से क्या तात्पर्य है ? हिंदी के लिए उसकी पत्र-पत्रिकाएँ क्या कर रही है ? 2
- घ) उपर्युक्त गद्यांश के लिए उपयुक्त शीर्षक दीजिए। 1
- ङ) सरकारी और अतीत शब्दों के विलोम लिखें। 1
- च) समय तथा प्रार्थना शब्द के पर्यायवाची लिखिए। 1
- छ) जागरूकता और संप्रेषण शब्दों में से उपसर्ग और प्रत्यय अलग कीजिए। 1

प्र० 2 निम्नलिखित पद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए।

1 X 5 =5

न देख रास्ता कठिन, न सोच रात है कि दिन  
सधे हुए कदम उठा, न कोस एक- एक गिन।  
तुझे बुला रही पथिक, डगर अगम कठिन विषम,  
न लक्ष्य दूर है कहीं, उठा कदम बढा कदम।  
डगर निहारती तुझे, विजय पुकारती तुझे

बुला रही सगर्व सुन महान भारती तुझे

न और वक्त है रहा, प्रवीर रक्त तू बहा |

न शेष कुछ रहा, जिसे तुझे न आज है कहा|

क) इन काव्य-पंक्तियों में किस मार्ग पर कदम बढ़ाने के लिए किसे उत्साहित किया जा रहा है?

ख) भयानक और कठिन है – यह किन शब्दों द्वारा स्वीकार किया गया है ?

ग) रास्ते पर बढ़ते हुए पथिक से किन बातों की ओर ध्यान न देने का अनुरोध किया है

ग) कवि ने किस प्रकार पथिक को स्वाभिमान और कर्तव्य का बोध कराया ?

घ) न कोस एक- एक गिन ' कथन का आशय स्पष्ट करें |

खंड (ख)

प्र० 3 निम्नलिखित में से किसी एक विषय पर निबंध लिखिए।

10

क) आतंकवाद : विश्व के लिए भयानक खतरा

ख) मन के हारे हार है मन के जीते जीत

ग) युवा पीढ़ी और राष्ट्र निर्माण

घ) सबसे बड़ा सुख – स्वस्थ शरीर

प्र० 4 अपने नगर के विद्युत विभाग के महाप्रबंधक को पत्र लिखिए जिसमें परीक्षा के दिनों में बिजली चले जाने के कारण विद्यार्थियों की परेशानियों को व्यक्त किया गया हो।

5

अथवा

खर्चीले फैशन की होड़ छोड़ने एवं कुसंगति से दूर रहने के लिए सुझाव देते हुए अपने छोटे भाई को पत्र लिखिए।

प्र० 5 निम्नलिखित प्रश्नों के संक्षिप्त उत्तर लिखिए:-

1x5=5

क) जन संचार के माध्यम कौन-कौन से हैं ?

ख) खोज परक पत्रकारिता क्या है? ?

ग) हिंदी का पहला समाचारपत्र कहाँ और किसके द्वारा प्रकाशित किया गया ?

घ) ब्रेकिंग न्यूज से क्या है ?

ड.) पहली बोलती फ़िल्म कौन सी है

प्र० 6 "योग का महत्त्व " अथवा " महानगरीय जीवन" विषय पर फीचर लिखिए |5

खंड (ग)

प्र० 7 निम्नलिखित पद्यांश को पढ़ कर पूछे गए प्रश्नों के उत्तर लिखिए।

3x2=6

कहाँ तो तय था चिरागाँ हरेक घर के लिए

कहाँ चिराग मयस्सर नहीं शहर के लिए।

वहाँ दरख्तों के साये में धूप लगती है

चलों यहाँ से चले और उम्र भर के लिए।

क) दरख्तों के साये में धूप लगने का व्यंग्य स्पष्ट कीजिए ।

ख) कवि पलायनवादी क्यों बनना चाहता है ?

ग) कवि और कविता का नाम लिखिए ।।

अथवा

सबसे खतरनाक वह रात होती है

जो जिंदा रूह के आसमानों पर ढलती है ,

जिसमें सिर्फ उल्लू बोलते और हुआ हुआ करते गीदड़ ,

हमेशा के अंधेरे बंद दरवाजों – चौगाठो पर चिपक जाते हैं ।

क)कवि किस रात को सबसे खतरनाक मानता है ?

ख)जिंदा रूह के आसमान “ द्वारा कवि क्या कहना चाहता है

ग)उल्लू और गीदड़ किनके प्रतीक हैं ?

प्र० निम्नलिखित पद्यांश का काव्य सौन्दर्य और भाव सौन्दर्य लिखिए ।

3+3=6

पग घुंघरू बांधि मीरा नाची

मैं तो मेरे नारायण सू , आपहि हो गई साची

लोग कहै , मीरां भइ बावरी ; न्यात कहै कुल नासी

विष का प्याला राणा भेज्या , पीवत मीरां हाँसी

मीरां के प्रभु गिरधर नागर , सहज मिले अविनासी ।

अथवा

निकल रहा है जलनिधि- तल पर दिनकर- बिंब अधूरा।

कमला के कंचन- मंदिर का मानो कांत कँगूरा।

लाने को निज पुण्य- भूमि पर लक्ष्मी की असवारी

रत्नाकर ने निर्मित कर दी स्वर्ण- सड़क अति प्यारी।

प्र० 9 निम्नलिखित प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर लिखिए ।

3x4=12

क)मायके आई बहन के लिए कवि ने घर को परिताप का घर क्यों कहा है?

ख)कवयित्री अक्कमहादेवी क्रोध. मद , मोह. लोभ. इर्ष्या को क्यों दुत्कारती है .?

ग)कवि 'पाश'ने किस आशय से मेहनत की लूट मार की पुलिस ,को सबसे खतरनाक क्यों नहीं माना ?

घ)आओ मिल कर बचाएँ “ में कवयित्री क्या बचाने की प्रेरणा देती है ?

ड.)वे आँखे “ कविता में कवि ने किसान की पीड़ा से के लिए किसे जिम्मेदार कहा है?

प्र० 10 निम्नलिखित गद्यांश को पढ़ कर पूछे गए प्रश्नों के उत्तर लिखिए ।

2x3=6

कुछ नहीं कर सकते आप ? तो मेहरबानी करके यह कुर्सी छोड़ दीजिए क्योंकि यहाँ पर कुछ कर सकने वाला आदमी चाहिए | जो ट्यूशन के नाम पर चलने वाली धाँधलियों को रोक सके... मासूम और बेगुनाह बच्चों को ऐसे टीचर्स के शिकंजों से बचा सके जो ट्यूशन न लेने पर बच्चों के नंबर काट लेते हैं ....और आप हैं कि कापियाँ न दिखाने के नियम से उनके सारे गुनाह ढक देते हैं |

क) कौन किसे कुर्सी छोड़ने की सलाह देता है ?

ख) कुर्सी पर कैसा आदमी अपेक्षित है ?

ग) लेखिका प्राचार्य पर क्या आरोप लगाती है ?

अथवा

रास बिहारी एवेन्यू की एक बिल्डिंग में मैंने एक कमरा भाडे पर लिया था | वहाँ पर बच्चे इंटरव्यू के लिए आते थे | बहुत -से लड़के आए ,लेकिन अपू की भूमिका के लिए मुझे जिस तरह का लड़का चाहिए था ,वैसा एक भी नहीं था | एक दिन एक लड़का आया | उसकी गर्दन पर लगा पाउडर देख कर मुझे शक हुआ | नाम पूछने पर नाजुक आवाज में वह बोला - "टिया " |

क) फिल्मकार कहाँ रहता था ?

ख)उसके पास बच्चे इंटरव्यू के लिए क्यों आते थे ?

ग) फिल्मकार को किस बात पर शक हुआ ? उसका शक कैसे दूर हुआ?

प्र० 11 निम्नलिखित प्रश्नों में से किन्हीं तीन के उत्तर दीजिए | 3+3+3=9

क) कलाकारों को कब लगता है कि वे चाहें तो पहाड़ हिला सकते हैं ? ख) कर्जन को इस्तीफा क्यों देना पड़ा

ग) धनराज को मोहन के किस व्यवहार पर हैरानी होती है और क्यों

घ ) नेहरू जी ने देशभक्ति जगाने के लिए क्या कार्य किया ?

प्र० 12 "आलो -आँधारि " नामक पाठ से आपको क्या प्रेरणा मिलती है?5

अथवा

पातरपानी , पातालपानी , तथा रेजाणीपानी के बारे में आप क्या जानते हैं?

प्र० 13 निम्नलिखित प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर लिखिए | 2x3=6

क) लता ने चित्रपट -संगीत में क्या योगदान दिया ? ख) वर्षा न होने की स्थिति में कुई में पानी कहाँ से आता है ?

ग) बेबी हालदार बाहर के किसी व्यक्ति से बात क्यों नहीं करती थी ?

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Atomic Energy Central School No. 4 Rawatbhata

Confidence Examination (2017-18)

Time: 3 Hrs

Class XI , Physical Education

Max. Marks: 70

Instructions:

- Question paper consists of 26 questions.
- 1 marks questions must be answered in approximately 10-20 words.
- 3 marks questions must be answered in approximately 30-50 words.
- 5 marks questions must be answered in approximately 75-100 words.

QUESTIONS

Q.1.What do you understand by “Olympic Movement”?	1
Q.2.What is positive Life Style?	1
Q.3.Define Yoaga.	1
Q.4.Who developed the method of Somato type?	1
Q.5.Which force is experienced by Cyclist while turning?	1
Q.6.Where and Which side is tricuspid valve situated?	1
Q.7.Explain Archimedes principle.	1
Q.8.Name any four joints with example.	1
Q.9.Diffentiate between fast twitch and slow twitch muscle fibre.	1
Q.10.Define Psychology.	1
Q.11.What is Sports training?	1
Q.12.Explain any three development in Physical Education, post Independence.	3
Q.13.Write the desirable qualities of a leader.	3
Q.14.Explain Levers and its types.	3
Q.15.Describe the functions of Skeleton system.	3
Q.16.What is Blood doping? List the types of blood doping.	3
Q17.Limbering down is as important as Warming up, explain.	3
Q.18.Differentiate between Psychology and Sports Psychology.	3
Q.19.Draw a labeled diagram of Volleyball Court.	3



Q.20.Explain the factors affecting Physical Fitness and Wellness.	5
Q.21.What is Inclusion? Explain the need of Inclusion.	5
Q.22.Describe the elements of Yoga.	5
Q.23.Explain the importance of Biomechanics in Physical education and Sports.	5
Q.24.Describe the Principles of Sports Training.	5
Q.25.Describe the importance of Anatomy and Physiology.	5
Q.26.Explain the responsibilities of Athletes to control doping.	5

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