

St. PBN PUBLIC SCHOOL
HALF YEARLY EXAMINATION
CLASS XI
PHYSICAL EDUCATION
SAMPLE PAPER

Time: 3 Hours

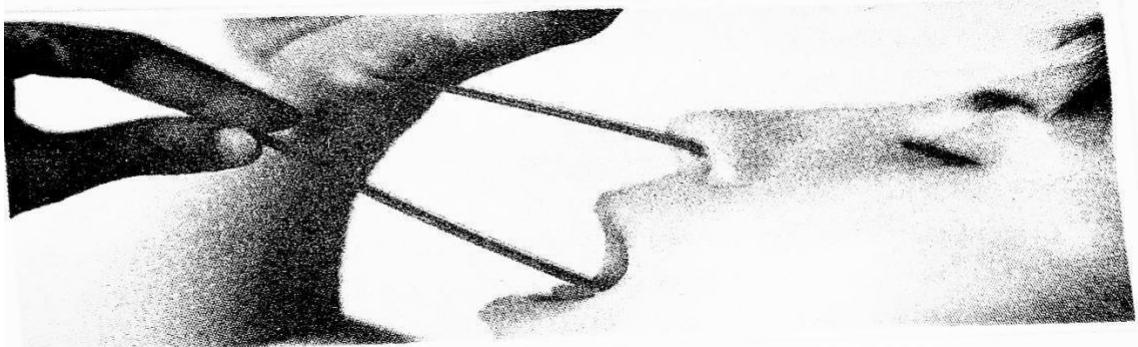
Max. Marks: 70

GENERAL INSTRUCTIONS:

- 1. The question paper consists of 5 sections and 37 Questions.**
- 2. Section A consists of questions 1-18 carrying 1 mark each and are multiple choice questions. All questions are compulsory.**
- 3. Sections B consists of questions 19-24 carrying 2 marks each and are very short answer types and should not exceed 60-90 words. Attempt any 5.**
- 4. Sections C consists of questions 25-30 carrying 3 marks each and are short answer types and should not exceed 100-150 words. Attempt any 5.**
- 5. Sections D consists of questions 31-33 carrying 4 marks each and are case studies. There is internal choice available.**
- 6. Section E consists of question 34-37 carrying 5 marks each and is long answer types and should not exceed 200-300 words. Attempt any 3.**

(SECTION - A)

Q1. Identify the Kriya?



- (a) Dhauti kriya (b) Basti Kriya (c) Trataka kriya (d) Sutra Neti

Q2. The sport which is not included in the Olympics is:

- (a) Cricket (b) Hockey (c) Football (d)

Athletics Q3. Which of the following is not an objective of Fit India Programme?

- (a) Fitness for all (b) To encourage masculine body
(c) Encourage indigenous sports (d) Fitness reaches every school

Q4. Which of the following is not the objective of physical education?

- (a). Emotional development (b) Social development
(c). Reduce tension (d) Evaluation

Q5. Given below are the two statements labelled Assertion (A) and Reason (R):

A: Physical education is the development of built –in qualities in the child through physical activities.

R: Physical development helps achieve all round development

In the context of above two statements, which one of the following is correct?

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
(b) Both (A) and (R) are true but (R) is not the correct explanation of (A).
(c) (A) is true but (R) is false.
(d) (A) is false but (R) is true.

Q6. Who is the Father of the modern Olympic Games?

- (a) Pierre-de-Coubertin (b) Aristotle
(c) John Pele (d) None of these

Q7. Which country has roots for practice of Yoga?

- (a) India (b) USA (c) UK (d) Australia

Q8. Summer Olympics are held every_____years.

- (a) Five (b) Four (c)Two (d)Six

Q9. How many rings are there in the Olympics symbol?

- (a)Four (b) Five (c) six (d) None

Q10. Match List-I with List-II and select the correct answer from the code given below

Column A	Column B
A. Wearable gear	(i) Natural grass
B. Playing Surface	(ii) Smart Watch
C. Protective Equipment	(iii) 3D Lasers
D. Sensor Tools	(iv) Helmet

Option	Code			
	A	B	C	D
a)	iv	ii	i	iii
b)	i	ii	iii	iv
c)	iii	iv	ii	i
d)	ii	i	iv	iii

Q11. Kapalbhati improves the functioning of the:

- (a) Lungs (b) Knees (c) Joints (d) Liver

Q12. The word 'Yoga' is derived from which Sanskrit word?

- (a) Nir (b) Yuj (c) Yukti (d) None

Q13. Which of the following is not Disability etiquette?

- (a) Avoid asking personal questions (b) Use a normal tone of voice
(c) Listen attentively (d) Pretending to understand

Q14. Elements of Yoga can be explained in terms of:

- (a) Ashtanga Yoga (b) Neti (c) Yama (d) Kapalabhati

Q15. Olympic flame was first introduced in:

- (a) 1896 (b) 1928 (c) 1956 (d) 2008

Q16. Physical exercise done in the presence of oxygen is called:

- (a) aerobic (b) anaerobic (c) isometric (d)

isokinetic Q17. Adaptive physical education is :

- (a) Cognitive and Motor development
(b) The opportunity for a person exclusively
(c) Specific Programme
(d) All of the above

Q18. What is the maximum range of movement possible at a joint known as?

- (a) Flexibility (b) Coordinative ability
(c) Locomotors ability (d) None of the above

(SECTION - B)

Q19. What is the aim of Physical Education? Q20. What do you mean by intellectual disability?

Q21. Give the benefits of Kapal bhati.

Q22. What do you understand by the term Pranayama? Q23.

Briefly explain the ancient Olympics?

Q24. Describe any two career options in Physical education.

(SECTION - C)

Q25. Explain the Olympic values.

Q26. Write a short note on FIT INDIA

Program. Q27. Describe any 2 Yogic Kriyas.

Q28. What are the types of disability? Explain briefly.

Q29. A good leader delegates duties and responsibility. Do you agree? Q30.

Explain Physical Wellness.

(SECTION - D)

Q31. Rohan, a student of class XI has taken up physical education as he is very interested in making his career in the field of Physical Education. When he was introduced to the career options available in the subject, he became a bit hesitant about continuing in this field because for him physical education was just about playing so he approached his subject teacher to explain his position. On the basis of the given information given below are a few queries of Rohan and you have to give him the reply according to the information provided to you in the chapter.

- (a) A child interested in reporting the sports event should further study_____.
- (b) For making a future in Officiating a person should do_____course.
- (c) Teaching physical education to primary students requires_____as qualification.
- (d) Designing and researching sports equipment is related to_____.

Q32. While introducing the chapter of Olympism in physical Education class, Mr Davis found that children were not familiar with the term and were clueless about the various committees working in this field. So, he explained in detail about IOC and various information related to it were discussed. Based on your knowledge about IOC answer the following questions.

- (a) The full form of IOC is
- (b) IOC was established in
- (c) The headquarter of IOC is situated at
- (d) The first president of the Indian Olympic Association was

Q33. Sachin was suffering from depression along with other symptoms like pain in whole spine, pain in the hip joints and knee joints and also at the back of the thighs. He could not turn his neck and had pain and stiffness in neck and shoulders. He felt shortness of breath after a few steps. He also had travelling issues. He could not fold legs or sit down on the floor. He had tried many medicines but of no use. He heard about the yoga practices from one of his friends. He searched for a certified yoga teacher and met him. The yoga teacher taught him different yoga asana, pranayama, meditation and yogic kriyas. Sachin also learnt about Yoga Nidra. After 3 months of regular practice of yoga and better eating habits, many of his body aches have gone and he is living a better life.

- (a) Word 'Yoga' derived from

- (b) Definition 'Checking the impulses of mind is Yoga' was given by
- (c) The term used to describe alternate nostril breathing in yoga is
- (d) The concentration of mind on an impulse without any divergence is known as

(SECTION - E)

Q34. How is yoga beneficial for us explain

Q35. Describe technology advancement in sports.

Q36. What is the role of various professionals for the differentlyabled? Explain.

Q37. Write down in details about International Olympic Committee

**ST. PBN PUBLIC SCHOOL
HALF YEARLY EXAMINATION
CLASS-XI
CHEMISTRY
SAMPLE PAPER**

TIME: 3 Hours.

MM: 70

General Instructions:

1. There are 35 questions in this question paper with internal choice.
2. SECTION A consists of 18 multiple-choice questions carrying 1 mark each.
3. SECTION B consists of 7 very short answer questions carrying 2 marks each.
4. SECTION C consists of 5 short answer questions carrying 3 marks each.
5. SECTION D consists of 2 case-based questions carrying 4 marks each.
6. SECTION E consists of 3 long answer questions carrying 5 marks each.
7. All questions are compulsory.

SECTION-A

1. The number of significant figures in the measurement 0.00345 is:
(a) 2 (b) 3 (c) 4 (d) 5
2. The limiting reactant in a chemical reaction is the reactant that:
(a) Is present in the smallest amount (b) Is completely consumed in the reaction
(c) Determines the amount of product formed (d) Both A and B
3. What is the volume occupied by 2 moles of an ideal gas at STP?
(a) 11.2 L (b) 22.4 L (c) 44.8 L (d) 89.6 L
4. Total number of nodes for 3d orbital is _____
(a) 3 (b) 2 (c) 1 (d) 0
5. According to Aufbau's principle, which of the following orbital should be filled first?
(a) 5d
(b) 4p
(c) 3p
(d) 2s
6. The elements of group 16 are called———
(a) Noble gases (b) chalcogens
(c) Halogens (d) alkali metals
7. The correct bond order in the following species is _____.
(a) $O_2^+ < O_2^- < O_2^{2+}$ (b) $O_2^- < O_2^+ < O_2^{2+}$
(c) $O_2^{2+} < O_2^+ < O_2^-$ (d) $O_2^{2+} < O_2^- < O_2^+$
8. The structure of IF_7 is
(a) Pentagonal bipyramid (b) Square pyramid
(c) Trigonal bipyramid (d) Octahedral

9. Calculate the formal charge of C in CH₄.
 (a) 4 (b) 1 (c) -4 (d) 0
10. Which of the following molecules have trigonal planar geometry?
 (a) BF₃ (b) NH₃
 (c) PCI₃ (d) IF₃
11. Ionic bonds will be formed more easily between elements with comparatively:
 (a) low ionization enthalpy and high electron affinity (b) high ionization enthalpy and high electron affinity
 (c) low ionization enthalpy and low electron affinity (d) high ionization enthalpy and low electron affinity
12. The correct order of increasing energy of atomic orbital is:
 (a) 5p<4f<6s<5d (b) 5p<6s<4f<5d (c) 4f<5p<5d<6s
 (d) 5p<5d<4f<6s
13. Find the oxidation state of I in H₄IO₆⁻
 (a) +7 (b) +5 (c) +1 (d) -1
14. Values of standard electrode potential of three metals X, Y and Z are -1.2V, +0.5V and -3.0V respectively. The reducing power of these metals will be in order
 (a) X>Y>Z (b) Y>Z>X (c) Y>X>Z (d) Z>X>Y

Assertion and Reason Type Questions

In the following questions a statement of Assertion (A) followed by a statement of Reason (R) is given. Choose the correct option out of the choices given below each question..

- (a) Both A and R are true and R is the correct explanation of A.
 (b) A is true but R is false
 (c) A is false but R is true
 (d) Both A and R are false.

15. **Assertion (A):** Significant figures for 0.200 is 3 whereas for 200 it is 1.

Reason (R): Zero at the end or right of a number are significant provided they are not on the right side of the decimal point

16 **Assertion(A) :** One atomic mass unit is defined as one twelfth of the mass of one carbon – 12 atom.

Reason(R) : Carbon-12 isotope is the most abundant isotope of carbon and has been chosen as standard.

17 **Assertion (A) :** It is impossible to determine the exact position and exact momentum of an electron simultaneously.

Reason(R) : The path of an electron in an atom is clearly defined.

18. **Assertion (A) :** CH₂Cl₂ is non-polar and CCl₄ is polar molecule.

Reason(R): Molecule with zero dipole moment is non-polar in nature.

SECTION –B

- 19 Show the distribution of electrons in an oxygen atom (atomic number 8) using an orbital diagram.
- 20 Explain Heisenberg uncertainty principle.
21. Define Avagadro's law
- 22 Draw the Lewis structure of CO
- 23 Draw the structure of XeO₃ and write its shape.
- 24 What is limiting reagent? Explain it by using a suitable example.
- 25 What is disproportion reaction? Give one example of it.

SECTION C

- 26 The Balmer series in the hydrogen spectrum corresponds to the transition from $n_1 = 2$ to $n_2 = 3, 4, \dots$. This series lies in the visible region. Calculate the wave number of line associated with the transition in Balmer series when the electron moves to $n = 4$ orbit. ($R_H = 109677 \text{ cm}^{-1}$).
27. What is ionisation enthalpy? Explain the factors which affect the ionisation enthalpy.
- 28 Draw the molecular orbital diagram of O₂ and find its bond order.
- 29 The density of 3 molal solutions of given NaOH is 1.110 g mL^{-1} . Calculate the required molarity of the solution.
- 30 Write formulas for the following compounds:

- (a) Mercury (II) chloride, (b) Nickel (II) sulphate, (c) Tin (IV) oxide

SECTION D

31 The atomic and ionic radii decrease with increase in atomic number along a period from left to right. Atomic size and ionic size increases down the group. Ionisation enthalpy decreases down the group and increases along a period from left to right. It also depends upon shielding effect as well as stability of electronic configuration. Electronegativity decreases down the group but increases along the period.

- (a) Arrange the elements of second period in increasing order of first ionisation enthalpy.
- (b) Arrange the elements of group 13 in increasing order of atomic size.
- (c) Select the amphoteric oxides among the following:

NO, B₂O₃, Cr₂O₃, BeO, ZnO, CO₂, Al₂O₃

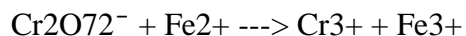
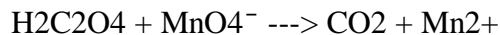
- (d) For an element $IE_1 = 738 \text{ kJ mol}^{-1}$, $IE_2 = 1450 \text{ kJ mol}^{-1}$, $IE_3 = 7700 \text{ kJ mol}^{-1}$, $IE_4 = 1.1 \times 10^4 \text{ kJ mol}^{-1}$. Name the main group to which element belong. Why?

32. The attractive force which holds the two atoms together is called chemical bond. Covalent bond is formed by equal sharing of electrons. Coordinate bond is formed by unequal sharing of electrons. Ionic bond is formed by transfer of electrons from one atom to another. Octet rule, although very useful but it is not universally applicable. According to valence bond theory, covalent bond is formed by overlapping of half-filled atomic orbitals resulting in lowering of energy and more stability. Bond order is the number of bonds between atoms in a molecule. Higher the bond order, more will be stability and bond dissociation enthalpy but smaller bond length. Polarity of covalent bond depends upon difference in electronegativity. Covalent character of bond depends upon polarising power, smaller cation and bigger anions have higher polarising power. VSEPR theory helps to predict shapes of molecules.

- (a) Write the, electron dot structure of N_2O .
- (b) What are ions present in CsI_3 ?
- (c) Out of CN^+ , CN^- , NO , which has highest bond order?
- (d) What is correct order of repulsion bp - bp, lp - lp and lp - bp?

SECTION E

33 Balance the following equation by oxidation number method:



- 34 (i) Calculate the total number of electrons present in one mole of methane.
- (ii) Find (a) the total number and (b) the total mass of neutrons in 7 mg of ^{14}C . (Assume that mass of a neutron = $1.675 \times 10^{-27}\text{kg}$).
- (iii) Find (a) the total number and (b) the total mass of protons in 34 mg of NH_3 at STP.

Will the answer change if the temperature and pressure are changed?

35 A photon of wavelength $4 \times 10^{-7}\text{ m}$ strikes on metal surface ; the work function of the metal being 2.13 eV. Calculate (i) the energy of the photon,

- (ii) the kinetic energy of the emission
- (iii) the velocity of the photoelectron. (Given $1\text{ eV} = 1.6020 \times 10^{-19}\text{ J}$).

**ST. PBN PUBLIC SCHOOL
HALF YEARLY EXAMINATION
CLASS XI
SUBJECT- ENGLISH
SAMPLE PAPER**

TIME: 3 HRS

MM. 80

GENERAL INSTRUCTIONS:

1. ALL QUESTIONS ARE COMPULSORY.
2. READ ALL INSTRUCTIONS CAREFULLY.

**Q1. Read the following passage carefully and tick the correct options that follow:
(10M)**

1. Maharana Pratap ruled over Mewar only for 25 years. However, he accomplished so much grandeur during his reign that his glory surpassed the boundaries of countries and time turning him into an immortal personality. He along with his kingdom became a synonym for valour, sacrifice and patriotism. Mewar had been a leading Rajput kingdom even before Maharana Pratap occupied the throne. Kings of Mewar, with the cooperation of their nobles and subjects, had established such traditions in the kingdom, as augmented their magnificence despite the hurdles of having a smaller area under their command and less population. There did come a few thorny occasions when the flag of the kingdom seemed sliding down. Their flag once again heaved high in the sky thanks to the gallantry and brilliance of the people of Mewar.

2. The destiny of Mewar was good in the sense that barring a few kings, most of the rulers were competent and patriotic. This glorious tradition of the kingdom almost continued for 1500 years since its establishment , right from the reign of Bappa Rawal. In fact only 60 years before Maharana Pratap, Rana Sanga drove the kingdom to the pinnacle of fame. His reputation went beyond Rajasthan and reached Delhi. Two generations before him, Rana Kumbha had given a new stature to the kingdom through victories and developmental work. During his reign, literature and art also progressed extraordinarily. Rana himself was inclined towards writing and his works are read with reverence even today. The ambience of his kingdom was conducive to the creation of high quality work of art and literature. These accomplishments were the outcome of a longstanding tradition sustained by several generations.

3. The life of the people of Mewar must have been peaceful and prosperous during the long span of time; otherwise such extraordinary accomplishment in these fields would not have been possible. This is reflected in their art and literature as well as their loving nature. They compensate for lack of admirable physique by their firm but pleasant nature. The ambience of Mewar remains lovely thanks to the cheerful and liberal character of its people.

4. One may observe astonishing pieces of workmanship not only in the forts and palaces of Mewar but also in public utility buildings. Ruins of many structures which are still

standing tall in their grandeur are testimony to the fact that Mewar was not only the land of the brave but also a seat of art and culture. Amidst aggression and bloodshed, literature and art flourished and creative pursuits of literature and artists did not suffer. Imagine how glorious the period must have been when the Vijaya Stambha which is the sample of our great ancient architecture even today, was constructed. In the same fort, Kirti Stambha is standing high, reflecting how liberal the then administration was which allowed people from other communities and kingdoms to come and carry out construction work. It is useless to indulge in the debate whether the Vijaya Stambha was constructed first or the Kirti Stambha. The fact is that both the capitals are standing side by side and reveal the proximity between the king and the subjects of Mewar.

5. The cycle of time does not remain the same. Whereas the reigns of Rana Sanga were crucial in raising the kingdom to the acme of glory, it also proved to be his nemesis. History took a turn. The fortune of Mewar - the land of the brave, started waning. Rana tried to save the day with his acumen which was running against the stream and the glorious traditions for some time.

On the basis of your understanding of the above passage answer each of the following questions.

a. Maharana Pratap became immortal because

- (i) he ruled Mewar for 25 year
- (ii) he added a lot of grandeur to Mewar
- (iii) of his valour, sacrifice and patriotism
- (iv) Both (ii) and (iii)

b. Difficulties in the way of Mewar were

- (i) lack of cooperation of the nobility
- (ii) ancient traditions of the kingdom
- (iii) its small area and small population
- (iv) the poverty of the subjects

c. During thorny occasions

- (i) the flag of Mewar seemed to be lowered
- (ii) the flag of Mewar was hoisted high
- (iii) the people of Mewar showed gallantry
- (iv) most of the rulers heaved a sigh of relief

d. Mewar was lucky because

- (i) all of its rulers were competent
- (ii) most of its people were competent
- (iii) most of its rulers were competent
- (iv) only a few of its people were incompetent

e. Who was the earliest king of Mewar mentioned in the passage?

- (i) Rana Kumbha
- (ii) Bappa Rawal
- (iii) Maharana Pratap
- (iv) Ranasanga

f. Find words from the passage which mean the same as: 2

- a. surprising (para 4)
- b. evidence (para 4)

g. What was Rana Kumbha's contribution to the glory of Mewar? 2

h. How could art and literature flourish in Mewar?

Q2. Read the passage carefully and tick the correct option. (Any 8) (1x8=8M)

LIFE BEYOND ACADEMICS

1. Academics has always been an essential part of human development. It prepares us to survive in the outside world and establish an identity of our own. But, is an individual's development restricted to merely academics? In India, from an early age, we have been taught that education is limited to the boundaries of academics only; the idea of getting out into the field, for gaining practical experience, is always considered a hoax. This has hindered students' development. But, the truth is that education represents a considerably broader field than we know of it. Our teaching, from the basics, has been focused on getting good grades and job offers, rather than being creative and unique.

2. In the 21st century, the pure academic type of education is slowly paving way for a whole new type. The paradigm shift in the whole education system is evident. People have now come to understand that education is a 360 degree activity that should focus on students' overall development, rather than restricting him/her to the classroom.

3. Co-curricular activities that take place outside the classroom but reinforce or supplement classroom curriculum, in some way, have become a point of focus today. These activities help in the growth of the child, in more than one way. Participating in such activities helps youngsters grow mentally, socially and individually. Intellectual development of a student is developed in the classroom, but for the aesthetic development such as team- building, character- building, and physical growth, students must step out into the outside world. For instance, if a student is a part of school football team, he/ she will learn team- work and coordination, in a practical manner, which cannot be taught in the class.

4. Similarly, in colleges and institutions, there is a need for practical exposure so that the students can experience the actual working of an industry. For example, taking a student to a manufacturing firm will give him/ her real insight and better learning of the industry.

Catering to this change, most professional colleges including schools have started providing practical exposure to students through regular guest lectures, industrial visits, conferences, seminars, cultural festivals, and so on. With industry visits, students are able to better identify their prospective areas of work in the overall organizational function. Moreover, they help enhance interpersonal skills and communication techniques. In addition, guest lectures are equally important for all – round development of students. It is a great way for students to gain maximum exposure, as guest speakers talk about their real- life experiences and not what is there in the text books.

5. Through such events, students are made to participate and coordinate different events wherein, they get to know how exactly things are managed. Classroom teaching provides the foundation, and co-curricular or extra- curricular activities provide practical exposure and opportunities to implement what students learn in the classroom. This helps in developing the overall personality of the students, inculcating various soft – skills in them, which otherwise are difficult to teach. Clearly, life beyond academics creates creative and empowered professionals.

On the basis of your understanding of the above passage, answer the following any eight:

1. Students' development is hindered by _____.
2. The shift in the education system means_____.
 - i. to restrict to classroom activities.
 - ii. to focus on academic development.
 - iii. to ignore 360 degree activity.
 - iv. to focus on overall development.
3. Co- Curricular activities that take place outside the classroom do not help in_____.
4. Guest speakers talk about_____.
 - i. all round development.
 - ii. their real life experiences.
 - iii. what is in text books.
 - iv. gaining exposure.
5. Classroom teaching provides _____.
6. Life beyond academics facilitates _____.
 - i. organizational functions
 - ii. creativity
 - iii. professional fields
 - iv. industrial visits
7. What is the synonym of ‘fabricated’? (Para 1)

8. What is the synonym 'cooperative effort' (Para 3)

- i. Segregation
- ii. Isolation
- iii. Team work
- iv. All of the above

9. What is the antonym of 'theoretical' (Para 5)

Q3. Read the passage carefully. (8M)

1. How does television affect our lives? It can be very helpful to people who carefully choose the shows that they watch. Television can increase our knowledge of the outside world; there are high quality programmes that help us to understand many fields of study, science, medicine, and the arts and so on. Moreover, television benefits very old people who can't often leave the house, as well as patients in hospital. It also offers non-native speakers the advantage of daily informal language practice. They can increase their vocabulary and practice listening.

2. On the other hand, there are several serious disadvantages to television. Of course, it provides us with a pleasant way to relax and spend our free time, but in some countries, people watch the 'boob-tube' for an average of six hours or more a day. Many children stare at a television screen for more hours each day than they do anything else, including studying and sleeping. It's clear that the tube has a powerful influence on their lives and that its influence is often negative.

3. Recent studies show that after only thirty seconds of watching television, a person's brain 'relaxes' the same way that it does just before the person falls asleep. Another effect of television on the human brain is that it seems to cause poor concentration. Children who view a lot of television can often concentrate on a subject for only fifteen to twenty minutes. They can pay attention only for the amount of time between commercials.

4. Another disadvantage is that television often causes people to become dissatisfied with their own lives. Real life does not seem as exciting to these people as the lives of actors on the screen. To many people television becomes more real than reality and their own lives ... boring. Also many people get upset or depressed when they can't solve problems in real life as quickly as television actors seem to.

5. Before a child is fourteen years old, he or she views eleven thousand murders on the tube. He or she begins to believe that there is nothing strange about fights, killings and other kinds of violence. Many studies show that people become more violent after certain programs. They may even do the things that they saw in a violent show.

3.1. Make notes on the above passage using proper abbreviations (04) and suggest a Suitable title. (3 + 1 + 1 = 05 Marks)

2.2. Write a summary of the above passage in about 50 words (03 Marks).

Q4. Ministry of Social Justice and Empowerment needs a poster for its 'Prevention of Drug Abuse' campaign on the occasion of International Day against Drug Abuse (26th June every year). Draft a poster to raise public awareness against drug abuse. (8M)

OR

Design a poster against the ill-effects of plastics on the environment. Suggest alternative solutions as well.

Q5. Manish has to speak in the morning assembly on the topic that life in the village is better than the life in the city. Write the speech in 150-200 words. (8M)

OR

You are Navneet,/Namita a member of school Literacy Club, which has organized literacy classes in villages and city slums under the adult education program. Draft a speech in 150 - 200 words highlighting the importance of educating the illiterates.

Q6. Read the following questions carefully and fill with correct alternatives: (any three) (1x3=3M)

1. The body of the old man _____(discover) from the central lobby.

- (a) discovers (b) discover
(c) was discovered (d) had discovered

2. Yesterday when I _____ (go) to see my friend. I _____(find) his door locked.

- (a) goes, find (b) went, found
(c) go, find (d) was going, found

3. Rishabh _____(be) feeling thrilled because he has passed his S.S.C. Examination with 90% marks.

- (a) being (b) was
(c) is (d) are

4. The Delhi Jodhpur intercity express usually _____(come) on time.

- (a) comes (b) came
(c) will come (d) shall come

Q7. Rearrange the words or phrases given below to make meaningful sentences. 4M

- (a) they / in the hall / for / two hours / watching / had been / television
- (b) blessings / you / all / on / may / showered / be
- (c) the / had / crying / been / child / the / hours / two / last / for
- (d) fly / to escape / south / starvation / to / chill / and / they

Q8. Read the extract and tick the correct options that follow. (3marks)

And who art thou? said I to the soft falling shower,
which, strange to tell, gave me an answer, as here translated:

1. Identify I and “thou” here.
2. The expression and who art thou expresses _____.
 - a) hatred
 - b) indifference
 - c) curiosity
 - d) admiration
3. Who asks the question from rain?

OR

Now she’s been dead nearly as many years
As that girl lived. And of this circumstance
There is nothing to say at all.
Its silence silences.

1. Who is she referred to here?
2. The expression “Its silence silences” is.....
 - a) paradox
 - b) simile
 - c) repetition
 - d) alliteration
3. “This circumstance” refers to.....

Q9. Read the extract and choose the correct option from the following. (3marks)

When my parents were comfortably settled in the city, they sent for us. That was a turning point in our relationship. Although we shared the same room, my grandmother no longer came to school with me.

1. Whose parents are being talked about?
2. Who are ‘we’ in the second line?
3. Why author’s grandmother didn’t accompany him to school now?

OR

More problems arose when our hand pumps started to block up with the debris floating around the cabins and the electric pump short-circuited. The water level rose threateningly. Back on deck I found that our two spare hand pumps had been wrenched overboard — along with the forestay sail, the jib, the dinghies and the main anchor.

1. Who is I in the above passage?
2. What happened to the hand pump?
3. Name the chapter and the writer.

Q10. Read the extract and answer the following questions. (4marks)

‘Every time she leaves here she takes something home with her,’ said my mother. ‘She took all the table silver in one go. And then the antique plates that hung there. She had trouble lugging those large vases, and I’m worried she got a crick in her back from the crockery.’

1. Who is she in the first line?
2. Why was the author worried about that lady?
3. Where she was taking all the stuff?
4. Name the lesson and the author of the above extract.

OR

My cousin Mourad came running down the road. I’m not worried about you, he shouted. We’ve got to get that horse. You go this way and I’ll go this way. If you come upon him, be kindly. I’ll be near.

1. Who came running?
2. Aram was worried about whom?
3. Why were they going in different directions?
4. Name the lesson and the author of the above extract.

Q11. Answer the following questions in 40-50 words (any two) (2x3=6M)

1. How did Suzanne try to lighten the gloomy atmosphere?
2. Explain the title, “We are not afraid to die- if we can all be together.” What lesson does it teach?
3. How did Howard Carter find when he began investigating King Tut’s three nested coffins?

Q12. Answer the following question in 40-50 words (any one) (1x3=3M)

1. What did the narrator learn about Mrs. Dorling from her mother?
2. What traits of the Garoghlanian family are highlighted in this story?

Q13. Answer the following questions in 100-120 words (any one) (1x6=6M)

What image of the grandmother emerges from “The Portrait of a Lady”?

OR

What inspired the author to undertake such a risky voyage? What was his experience? (We’re Not Afraid to Die....if We Can All Be Together.)

Q14. Answer the following questions in 100-120 words (any one) (1x6=6M)

The story is divided into Pre-War and post-War times. What hardships do you think the girl underwent during that time?

OR

How did the narrator reach the conclusion that his cousin Mourad had stolen the horse? Why did he refuse to believe that Mourad could be a thief?

3. A particle is moving eastward with a velocity of 5 ms^{-1} in 10 seconds, the velocity changes to 5 m/s northward. The average acceleration in this time is
- (a) zero (b) $1/\sqrt{2} \text{ ms}^{-2}$ towards north
(c) $1/\sqrt{2} \text{ ms}^{-2}$ towards north-east (d) $1/\sqrt{2} \text{ ms}^{-2}$ towards north-west
4. The following forces are acting on a particle
- (i) $(2i + 3j - 2k) \text{ N}$, (ii) $(3i + j - 3k) \text{ N}$ (iii) $(-5i - 2j + k) \text{ N}$, the particle will move in
- (a) x-y plane (b) x-z plane (c) y-z plane (d) among x-axis
5. Lubrication reduces friction because
- (a) The relative motion is between the liquid and solid. (b) Laws of limiting friction are not applicable.
(c) Lubricant molecules act as ball bearings. (d) None of the above.
6. A car sometimes overturns while taking a turn. When it overturn, it is
- (a) the inner wheel, which leaves the ground first
(b) the outer wheel, which leaves the ground first
(c) both the wheels leaves the ground simultaneously
(d) either wheel, which leave the ground first
7. A ball is dropped from a height of 15 m . It gets embedded in sand by 10 mm and then stops. Which of the following is conserved?
- (a) Temperature (b) Momentum (c) Kinetic energy (d) Both (a) and (c)
8. A man weighing 50 kgf carries a load of 10 kgf to the top of the building in 5 minutes . The work done by him is 10^5 J . If he carries the same load in 10 minutes , the work done by him will be:
- (a) 10^5 J (b) $5 \times 10^5 \text{ J}$ (c) $12 \times 10^5 \text{ J}$ (d) $2.5 \times 10^5 \text{ J}$
9. When torque acting on a system is zero, then which of the following should not change?
- (a) Linear velocity (b) Angular momentum
(c) Angular displacement (d) Force acting on the body
10. The moment of inertia of a body does not depend upon
- (a) the mass of the body (b) the axis of rotation of the body
(c) the distribution of the mass in the body (d) the angular velocity of the body

For Questions 13 to 16, two statements are given –one labeled Assertion (A) and other labeled Reason (R). Select the correct answer to these questions from the options as given below.

a) If both Assertion and Reason are true and Reason is correct explanation of Assertion.

b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

c) If Assertion is true but Reason is false.

d) If both Assertion and Reason are false.

1. **Assertion:** If dot product and cross product of **A** and **B** are zero, it implies that one of the vector **A** and **B** must be a null vector

Reason: Null vector is a vector with zero magnitude.

2. **Assertion:** When we change the unit of measurement of a quantity, its numerical value changes.

Reason: Smaller the unit of measurement smaller is its numerical value.

3. **Assertion:** On a rainy day, it is difficult to drive a car or bus at high speed.

Reason: The value of coefficient of friction is lowered due to wetting of the surface.

4. **Assertion:** When you lean behind over the hind legs of the chair, the chair falls back after a certain angle.

Reason: Centre of mass lying outside the system makes the system unstable.

SECTION-B

1. Give an example of

(a) a physical quantity which has a unit but no dimensions.

(b) a physical quantity which has neither unit nor dimensions.

(c) a constant which has a unit.

(d) a constant which has no unit.

1. If the unit of force is 100 N, unit of length is 10 m and unit of time is 100 s, what is the unit of mass in this system of units?

1. a) What is the angle between **AxB** and **BxA**?

b) Can the resultant of two vectors of different magnitudes be zero? Justify.

1. A 50 g bullet is fired from a 10 kg gun with a speed of 500 ms^{-1} . What is the speed of the recoil of the gun?

2. It is easier to pull a roller than to push it. Why?

OR

A force of 98 N is just required to move a mass of 45 kg on a rough horizontal surface. Find the coefficient of friction and angle of friction?

SECTION-C

1. The frequency of vibration of a string depends on, (i) tension in the string (ii) mass per unit length of string, (iii) vibrating length of the string. Establish dimensionally the relation for frequency.
2. Define centripetal acceleration. Derive an expression for the centripetal acceleration of a particle moving with constant speed v along a circular path of radius r
3. A batsman deflects a ball by an angle of 45° without changing its initial speed which is equal to 54 km/h. What is the impulse imparted to the ball? (Mass of the ball is 0.15 kg.)
4. The bob of a pendulum is released from a horizontal position. If the length of the pendulum is 1.5 m, what is the speed with which the bob arrives at the lowermost point, given that it dissipated 5% of its initial energy against air resistance?
5. A elastic spring is compressed by an amount x . Show that its P.E. is $\frac{1}{2} kx^2$ where k is the spring constant.
6. Three masses 3, 4 and 5 kg are located at the corners of an equilateral triangle of side 1m. Locate the center of mass of the system.
7. An electron of mass 9×10^{-31} kg revolves in a circle of radius 0.53 \AA around the nucleus of hydrogen with a velocity of 2.2×10^6 m/s. Show that its angular momentum is equal to $h/2\pi$, where h is Planck's constant of value 6.6×10^{-34} Js.

OR

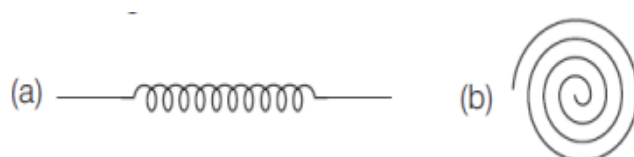
A cord is wound around the circumference of wheel of radius ' r '. The axis of the wheel is horizontal and moment of inertia about it is ' I '. The weight ' mg ' is attached to the end of the cord and falls from rest. After falling through a distance ' h ', determine the angular velocity of the wheel.

SECTION D

Case Study Based Questions

1. Read the following paragraph and answer the questions that follow.

Potential Energy of spring-There is many types of spring. Important among these are helical and spiral springs as shown in figure.



Usually, we assume that the springs are massless. Therefore, work done is stored in the spring in the form of elastic potential energy of the spring. Thus, potential energy of a spring is the energy associated with the state of compression or expansion of an elastic spring.

- (i) The ratio of spring constants of two springs is 2: 3. What is the ratio of their potential energy, if they are stretched by the same force?

(a) 2 : 3 (b) 3 : 2 (c) 4 : 9 (d) 9 : 4

(ii) The potential energy of a body is increases in which of the following cases?

- (a) If work is done by conservative force (b) If work is done against conservative force
(c) If work is done by non-conservative force (d) If work is done against non- conservative force

(iii) The potential energy of a spring when stretched through a distance x is 10 J. What is the amount of work done on the same spring to stretch it through an additional distance x ?
(a) 10 J
(b) 20 J (c) 30 J (d) 40 J

OR

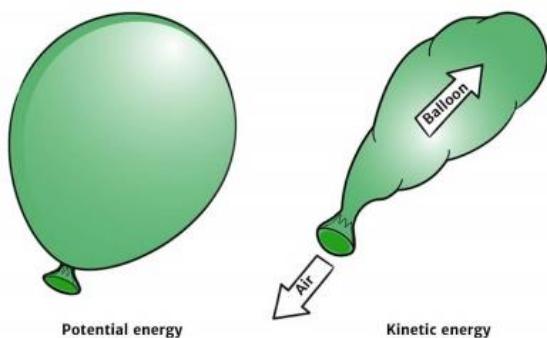
The potential energy of a spring increases by 15 J when stretched by 3 cm. If it is stretched by 4 cm, the increase in potential energy is

- (a) 27 J (b) 30 J (c) 33 J (d) 36 J

1. Read the following paragraph and answer the questions that follow.

Potential energy is the energy stored within an object, due to the object's position, arrangement or state. Potential energy is one of the two main forms of energy, along with kinetic energy. Potential energy depends on the force acting on the two objects.

Potential and Kinetic Energy



1. A body is falling freely under the action of gravity alone in vacuum. Which of the following quantities remain constant during the fall?

- 1.a. kinetic energy
1.b. potential energy
1.c. mechanical energy
1.d. none of these

1. Work done by a conservative force is positive, if

- 1.a. potential energy decreases
1.b. potential energy increases
1.c. kinetic energy decreases
1.d. kinetic energy increases

1. When does the potential energy of a spring increases?

- 1.a. only when spring is stretched
1.b. only when spring is compressed

- 1.c. both a and b
- 1.d. none of these

1. Dimension of k/m is, here k is force constant

- 1.a. T^2
- 1.b. T^{-2}
- 1.c. T^1
- 1.d. T^{-2}
- 1.e. **OR**

1. A vehicle of mass 5000kg climbs up a hill of 10 m. The potential energy gained by it

- 1.a. 5 J
- 1.b. 500 J
- 1.c. 5×10^4 J
- 1.d. 5×10^5 J

SECTION-E

1. (i) Derive an equation for the distance covered by a uniformly accelerated body in n th second of its motion.

(ii) A body covers 12m in 2nd second and 20m in 4th second. How much distance will it cover in 4 seconds after the 5th second?

OR

A ball is thrown upward with an initial velocity of 100 m/s. After how much time will it return?

Draw velocity time graph for the ball and find from the graph

- (i) The maximum height attained by the ball
- (ii) Height of the ball after 15s.

1. (i) State and prove parallelogram law of vector addition

(ii) Find the angle between two vectors $(\mathbf{P}+\mathbf{Q})$ and $(\mathbf{P}-\mathbf{Q})$ if resultant of the vectors is given by $\mathbf{R}^2=3\mathbf{P}^2+\mathbf{Q}^2$

OR

(i) If $\mathbf{A} = (2\mathbf{i}+3\mathbf{j}-\mathbf{k})$ m and $\mathbf{B} = (\mathbf{i}+2\mathbf{j}+2\mathbf{k})$ m, find the magnitude and component of vector \mathbf{A} along vector \mathbf{B}

(ii) If the projection of $2\mathbf{i}+4\mathbf{j}-2\mathbf{k}$ on $\mathbf{i}+2\mathbf{j}-\alpha\mathbf{k}$ is zero, then find the value of α

1. (i) What is meant by banking of roads?

(ii) What is the need for banking of a road?

(iii) Obtain an expression for the maximum speed with which a vehicle can safely negotiate a curved banked road at an angle θ . The coefficient of friction between the wheels and road is μ

OR

Discuss the motion of body in a vertical circle. Derive the expressions for velocity and tension in the string at any point. Hence find

- (i) Tension at the bottom and the top of a circle
- (ii) Minimum velocity at the lowest point for looping the loop
- (iii) Minimum velocity at the top.

St. PBN PUBLIC SCHOOL
HALY EARLY EXAMINATION 2024
CLASS XI
COMPUTER SCIENCE
(SUBJECT CODE-083)
SAMPLE PAPER

Time: 3 Hours

M.M:70

NAME: _____

DATE: _____

GENERAL INSTRUCTIONS:

- Please check this question paper contains 35 questions.
- This paper is divided into 5 Sections- A, B, C, D and E.
- Section A, consists of 18 questions (1 to 18). Each question carries 1 mark.
- Section B, consists of 7 questions (19 to 25). Each question carries 2 marks.
- Section C, consists of 5 questions (26 to 30). Each question carries 3 marks.
- Section D, consists of 3 questions (31 to 33). Each question carries 5 marks.
- Section E consists of 2 questions (34 to 35). Each question carries 4 marks.
- All programming questions are to be answered using Python Language only.

SECTION- A

Choose the correct option and write in the answer sheet

(1 x 18 = 18)

1. reads a sequence of lines of different heights and widths that are printed on various types of products.
(a) OCR (b) OMR
(c) MICR (d) Barcode Reader
2. How many bytes are there in 1011 1001 0110 1110 numbers?
(a) 1 (b) 2
(c) 4 (d) 8
3. The three greater than signs (>>>) are called the Python.....
(a) Cursor (b) Command Prompt
(c) Pointer (d) Blinking Cursor
4. Which smaller unit of CPU directs and coordinates all activities within it and determines the sequence in which instructions are executed, sending instruction sequence to other smaller units?
(a) CU (b) ALU
(c) Processor (d) All of these
5. What does the following code print to console?
If True:
 Print (101)
Else:

Print (202)

(a) 101

(b) 202

(c) 303

(d) 102

6. UTF8 is a type of encoding.

(a) ASCII

(b) Extended ASCII

(c) Unicode

(d) ISCII

7. Component of CPU which is responsible for comparing the contents of two pieces of data is

(a) ALU

(b) CU

(c) Memory

(d) Register

8. Identify the type of error shown below :

```
>>> 10 * (1/0)
Traceback (most recent call last):
  File "<pyshell#0>", line 1, in <module>
    10 * (1/0)
ZeroDivisionError: division by zero
```

(a) Syntax Error

(b) Run-time Error

(c) Logical Error

(b) None of these

9. Which one of the following if statement will execute successfully?

(a) if (1 , 2):

print ('hello')

(b) if (1 , 2)

print ('hello')

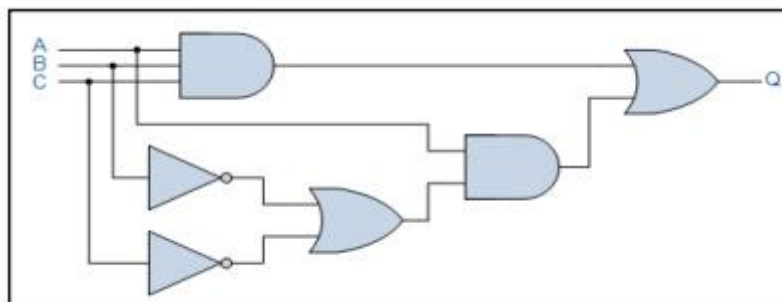
(c) if (1 , 2):

print ('hello')

(d) if (1):

print ('hello')

10. Select the equivalent Boolean expression from the following options for the logic circuit given below :



(a) $(A + B + C) \cdot A + (B' \cdot C')$

(b) $(A \cdot B \cdot C) + A + B' + C'$

(c) $(A + B + C) \cdot A' + (B \cdot C)$

(d) $(A \cdot B \cdot C) + A \cdot (B' + C')$

11. What is the output of this expression, $2*2**1$?

- (a) 27
- (b) 9
- (c) 3
- (d) 1

12. Consider the given expression:

"Python" or True and "Programming" or not 70

Which of the following will be correct output if the given expression is evaluated?

- (a) True
- (b) False
- (b) 'Python'
- (c) 'Programming'

13. Which of the following is NOT a computational thinking technique?

- (a) Coding
- (b) Decomposition
- (c) Pattern Recognition
- (d) Abstraction

14. What will be the output of the following Python code?

```
A=' Virtual Reality'
```

```
A.replace('Virtual','Augmented')
```

- (a) Virtual Augmented
- (b) Reality Augmented
- (c) Augmented Virtual
- (d) Augmented Reality

15. Which of the following will give "Simon" as output?

```
str1="John, Simon, Aryan"
```

- (a) print(str1[-7:-12])
- (b) print(str1[-11:-7])
- (c) print(str1[-12:-6])
- (d) print(str1[-7:-11])

16. Identify the correct print() statement:

- (a) print (Hello)
- (b) print("Hello")
- (c) print('Hello')
- (d) print("Hello')

Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as

- (a) Both A and R are true and R is the correct explanation for A
- (b) Both A and R are true but R is not the correct explanation for A
- (c) A is True but R is False
- (d) A is false but R is True

17. **Assertion (A):** Python is a dynamically typed language

Reason (R): The data type of a variable is declared as per the type of value assigned to it

18. **Assertion (A):** Comments are non-executable statements that are ignored by the interpreter

Reason (R): Comments are used to explain the code and to make it more informative for the users. They are basically statements used to put remarks.

SECTION B

(2x 7 = 14)

19. (a) What is the output of the following code?

```
a = 25
if a < 15:
    print("Hi")
if a <= 30:
    print("Hello")
else:
    print("Know Program")
```

(b) How many times will "Hello" be printed when the following python code is executed?

```
i=0
while (i<3) :
    print ("Hello")
    i=i+1
```

(1+1)

20. a) Write the python statement to type cast the float value of r = 90.45 into an integer type.
b) Draw a truth table of NAND Gate.

(1+1)

21. Distinguish between String Slicing and String Concatenation.

(2)

OR

Difference between algorithm and flowchart.

22. Write the output of the code given below :

```
mySubject = 'Computer Science'
print(mySubject[::2])
print(mySubject[-7:-1])
print(mySubject.isalpha())
print(mySubject.find('te'))
```

(2)

23. a) Convert Octal Number $(455)_8$ into its equivalent decimal number.

b) Write the truth table of a Boolean expression $X \cdot (Y+Z)=X \cdot Y+ X \cdot Z$

(1+1)

24. Distinguish between break and continue statements using examples.

(2)

25. Predict the output of the Python code given below:

```

a=0
y=0
for i in range(1,3):
    for j in range(1,i):
        x=i+j-1
        if x%2==0:
            y+=x
        elif z%3==0:
            y+=z-2
print(y)

```

SECTION C

(3x 5 = 15)

26. (i) What do you mean by Shorthand/Assignment operators?

(ii) Write a Python program to calculate and display Area and Perimeter of a rectangle.. (1+2)

27. (i) Rewrite the code after correcting the errors.

```

a = int["Enter a number for a:"]
for in range(1,15)
if a = b
print"Equal numbers"
else
print" Non equal numbers"

```

(ii) Distinguish between 'for loop' and 'while loop'.

(1+2)

28. Write a program to accept a string and check whether the string is palindrome or not.

OR

Using the string true human = 'Loves One and All', what would be returned by following string slices?

a) True human [- 3:]

b) True human [12:]

c) True human [10: - 12]

(3)

29. Write a Python program to swap two numbers without using a third variable.

(3)

30. Explain the following terms:

(i) Interpreter

(ii) HLL

(iii) TUI(Touch user Interface)

(3)

SECTION D

(5x 3 = 15)

31. Vidyapeeth is a reputed institution in the field of academics and extracurricular activities and involved in the overall growth of every child. Every year with the commencement of the new session, it hikes fee by 10% for all students which was done manually till now and required enormous efforts on the part of office staff.

To solve this problem develop a python program that automatically calculates this 10% fee hike every year after obtaining the basic fee amount from the user and displays it for the parents of students enrolled with the institute. (5)

32. (i) Write a python program to input a string having some digits and alphabets and calculate the total number of digits and alphabets present in that string.

For example:

Enter a string: I love2 python34 progr2amming

Output:

The total number of digits: 4

The total number of alphabets: 22

(ii) Write the output of the code given below:

```
myAddress = "WZ-1,New Ganga Nagar,New Delhi"  
print(myAddress.split(','))  
print(myAddress.index('ag'))  
print(myAddress.find('wz'))  
print(myAddress.lstrip('Z-1W'))
```

OR

(Option for part (ii) only)

Laxmi 's teacher has given her an assignment question on: By using the concept of Strings in Python, consider the string z = "Green Revolution". Write statements in python to implement the following:

(a) To display the last four characters.

(b) To repeat the string 3 times.

(3+2)

33. Write a program in Python to find the grade of the student when grades are allocated as given in the table

Percentage of Marks	Grade
Above 90%	A
80% to less than 90%	B
70% to less than 80%	C
60% to less than 70%	D
Below 60%	E

below:

Percentage of marks obtained by the student is input to the program

(5)

SECTION E

(2 x 4 = 8)

34. Write a programme that takes a sentence as an input parameter where each word in the sentence is separated by a space. The Function should replace each blank with a hyphen and then return the modified sentence. (4)

35. Shilpa of Class-XI was reading an article in the Newspaper. The article had some grammatical errors. Then Ajay thought of correcting the grammatical errors as well as to have fun by playing with the words and characters present in the article. Ajay belongs to Computer Science stream; she wrote a Python program to do the same. But in some parts, she had confusion. As a Computer Programmer, can you help Ajay for the above purpose?

```
str1="computer science"
uc=0
print (str1. ( ))      # Line 1
print (str1.upper())  # Line 2
print (str1. _ ())    # Line 3
str2=str1.lstrip("com")
for a in str1:
    if a.isupper():   # Line 4
uc+=1
print ("Number of uppercase characters in the string are : ",uc)
print (str2)
```

- (i) Fill in the blank in Line1 to print the line with 1st character in capital letter i.e. 'computer science'.
- (ii) Predict the outcome she will obtain while executing Line 2.
- (iii) Fill the blank in Line3 to print the line with first character of each word in capital letter.
- (iv) Help Reena to understand the purpose of Line 4 in the program.

(1+1+1+1)

ST. PBN PUBLIC SCHOOL
HALF YEARLY EXAMINATION
CLASS XI
SCIENCE
SAMPLE PAPER

TIME: 3 Hours.

MM: 70

General Instructions:

(i) All questions are compulsory.

(ii) The question paper has five sections and 33 questions. All questions are compulsory.

(iii) Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section–C has 7 questions of 3 marks each; Section–D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.

(iv) There is no overall choice. However, internal choices have been provided in some questions. A student must attempt only one of the alternatives in such questions.

(v) Wherever necessary, neat, and properly labelled diagrams should be drawn.

SECTION-A

1. Endoplasmic reticulum is in continuous with

- a) mitochondria
- b) Golgi body

- c) nuclear material
- d) cell wall
- d) stroma.

2. Quantasome are present in

- a) Golgi body
- b) mitochondria
- c) grana

3. spindle fibre is made up of
- a) Humulin
 - b) tubulin
 - c) intermediate filament.
 - d) flagellin.

4. chromosome replicate in which stage of meiosis?

- a) interphase

- b) prophase I
- c) prophase II
- d) telophase.

5 ABA acts antagonistic to

- a) IAA
- b) Gibberellic acid
- c) Cytokinin
- d) ethylene

6. 'kelps' is term used for giant
- a) blue green algae
 - b) green algae
 - c) brown algae
 - d) red algae.

7. Circular DNA is found in

- a) prokaryotes

- b) mitochondria
- c) many viruses
- d) all of these.

8. Middle lamella contains
- pectin
 - cellulose
 - lignin
 - chitin.
9. An open circulatory system occurs in
- Reptiles
 - Humans
 - Aves
 - Insects.
10. Which of the following is commonly called “walking fern”.
- Pteris
 - Dryopteris
 - Azolla
 - Adiantum.
11. slimy layer composed of polysaccharides is present over the cell wall in
- protists
 - bacteria
 - yeasts
 - viruses.
12. the ability of organisms to respond to changes in the environment (stimuli) is termed as
- irritability
 - adaptation
 - Homeostasis
 - None of these.

ASSERTION-REASONS

In the following questions, two statements are given—one labelled Assertion (A) and the other labelled Reason (R).

Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

(a) Both Assertion (A) and Reason (R) are correct statements, and Reason (R) is the correct explanation of the Assertion (A).

(b) Both Assertion (A) and Reason (R) are correct statements, but Reason (R) is not the correct explanation of the Assertion (A).

(c) Assertion (A) is correct, but Reason (R) is incorrect statement.

(d) Assertion (A) is incorrect, but Reason (R) is correct statement.

13. **Assertion:** Haemoglobin is a quaternary protein.

Reason: it consists of 4 amino acid units.

14. **Assertion:** The period between two successive divisions is called generation time

Reason: It depends on the type of cell and external factors.

15. **Assertion:** DNA replication occurs throughout the cell cycle in all organisms.

Reason: DNA replication is conservative.

16. **Assertion:** Rhizoids of liverworts are unicellular

Reason: Liverworts cannot develop multicellular rhizoids.

Section-B

17. Why abscisic acid also known as stress hormone?

18. What is meant by the tertiary structure of proteins?

19. What is heterospory? Briefly comment on its significance

20. Why is mitosis called equational division?

21. What are nuclear pores? State their function.

Section-C

22. List five main groups of natural plant growth regulators. Write a note on discovery, physiological functions of any one of them.

23. Name two cell organelles that are double bound. State their functions and draw labelled diagrams of both.

24 Describe the events taking place during the interphase.

25. Name three groups of plants that bear archegonia. Briefly describe the life cycle of any one of them.

26. How useful is the study of the nature of body cavity and coelom in the classification of animals.

27. Describe briefly the four major groups of protozoa.

28. Describe the important properties of enzymes.

Section- D

. CASE BASED QUESTIONS

Read the passage given below and answer the following questions:

29. The term 'algae' literally means 'sea weeds. The group algae comprise of most primitive photosynthetic, thalloid and eukaryotic organisms whose reproductive structures are unicellular (or multicellular) non jacketed gametangia. Algae are predominantly aquatic, occur both in marine as well as freshwater habitats. Based on the presence of characteristic photosynthetic pigments, algae are divisible into green algae, brown algae and red algae.

i) name the algae which is used for obtaining agar.

ii) write any two uses of agar?

iii) on which characteristics algae are divisible.

iv) give the diverse forms of thalli in green algae.

31. Lysosomes occur primarily in all animal cells and protozoans. They have also been reported in fungi and certain plant cells. They are noticeable with electron microscope only. They are generally spherical in form. Each lysosome is a tiny sac bounded by a single unit membrane of lipoprotein. It contains a dense, finely granular fluid. The latter consists of hydrolytic enzymes called acid hydrolases.

i) from where do lysosomes arise.?

ii) name three different kind of lysosomes present in plants? What do they contain besides digestive enzymes?

iii) how does a tadpole of frog lose tail during its metamorphosis?

iv) how you differentiate primary lysosomes, secondary lysosomes, residual bodies and autophagic vacuoles.

Section-E

31. What is the difference between direct and indirect development.

32. Describe the structure of Nucleus with the help of labelled diagram.

33. Describe the following

- a. Synapsis
- b. Bivalent
- c. Chiasmata

Draw a diagram to illustrate your answer.

St. PBN PUBLIC SCHOOL
HALF YAERLY EXAMINATION
CLASS - XI
MATHEMATICS
SAMPLE PAPER

Time 3 hours

M.M:80

General instructions:

- All questions are compulsory.
- Section A consists of 20 questions of 1 mark each.
- Section B consists of 5 questions of 2 marks each.
- Section C consists of 6 questions of 3 marks each.
- Section D consists of 4 questions of 5 marks each.
- Section E has 3 source based/case based/passage based of assessment of 4 marks each with sub parts.
- Use of calculator is not allowed.

Section A

1. For any set A, $(A')'$ is equal to

- | | |
|----------|---------------------|
| (i) A' | (iii) \emptyset |
| (ii) A | (iv) None of these. |

2. In set builder method the null set is represented by

- | | |
|------------------|-------------------------|
| (i) $\{\}$ | (iii) $\{x: x \neq x\}$ |
| (ii) \emptyset | (iv) $\{x: x = x\}$ |

3. Let R be a relation from a set A to set B, then

- | | |
|---------------------|--------------------------------|
| (i) $R = A \cup B$ | (iii) $R \subseteq A \times B$ |
| (ii) $R = A \cap B$ | (iv) $R \subseteq B \times A$ |

4. If the set A has p elements, B has q elements, then the number of elements in $A \times B$ has

- | | |
|------------------|------------|
| (i) $p + q$ | (iii) pq |
| (ii) $p + q + 1$ | (iv) p^2 |

5. If $a = 1 + i$, then a^2 equals

- | | |
|-------------|------------------------|
| (i) $1 - i$ | (iii) $(1 + i)(1 - i)$ |
| (ii) $2i$ | (iv) $i - 1$ |

6. The amplitude of $\frac{1}{i}$ is equal to

- | | |
|----------------------|------------------------|
| (i) 0 | (iii) $-\frac{\pi}{2}$ |
| (ii) $\frac{\pi}{2}$ | (iv) π |

7. Write the number of elements in the power set of null set.
- (i) 0 (iii) 2
(ii) 1 (iv) 3
8. The solution set of the inequation $|x + 2| \leq 5$ is
- (i) (-7, 5) (iii) [-7, 3]
(ii) [-5, 5] (iv) (-7, 3)
9. Write the interval in set builder form
- (i) (6,2) (ii) (-3,0)
10. If $4x + i(3x - y) = 3 + i(-6)$, where x and y are real numbers, then find the values of x and y.
11. Find the value of $\sin 765^\circ$.
12. Write the equations for x-axis and y-axis.
13. Find a point on the x-axis, which is equidistant from the points (7, 6) and (3, 4).
14. Evaluate: i^{19} .
15. Convert $40^\circ 20'$ into radian measure.
16. Find the range of the function $f(x) = [x]$, where $[x]$ is greatest integer function.
6, 7, 10, 12, 13, 4, 8, 12
17. Express $3(7 + 7i) + i(7 + 7i)$ in the form of $a+ib$.
18. If $(x+1, y-2) = (3, 1)$, find the values of x and y.
19. Solve $2(2x+3)-10 \leq 6(x-2)$.
20. Write the set of all vowels in English alphabet which precede s.

Section B

21. If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{2, 4, 6, 8\}$ and $B = \{2, 3, 5, 7\}$, verify that
- (i) $(A \cup B)' = A' \cap B'$ (ii) $(A \cap B)' = A' \cup B'$
22. Define the function $f: \mathbb{R} \rightarrow \mathbb{R}$ by $y = f(x) = x^2$, $x \in \mathbb{R}$. what is domain and range of this function?
23. Let $A = \{1, 2, 3\}$, $B = \{3, 4\}$ and $C = \{4, 5, 6\}$. Find
- (i) $A \times (B \cap C)$ (ii) $(A \times B) \cup (A \times C)$
24. Express the following in the form of $a+ib$:
- $$\frac{5 + \sqrt{2}i}{1 - \sqrt{2}i}$$
25. Find the value of x for which the points $(x, -1)$, $(2, 1)$ and $(4, 5)$ are collinear.

Section C

26. In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee?
27. Find all pairs of consecutive even positive integers, both of which are larger than 5, such that their sum is less than 23.
28. Find the conjugate of $\frac{(3-2i)(2+3i)}{(1+2i)(2-i)}$.
29. If $x+iy = \frac{a+ib}{a-ib}$, prove that $x^2 + y^2 = 1$.
30. Find the value of $\tan \frac{\pi}{8}$.
31. How many 3-digit even numbers can be made using the digits 1, 2, 3, 4, 6, 7, if no digit is repeated?

Section D

32. In a survey of 60 people, it was found that 25 people read newspaper H, 26 read newspaper T, 26 read newspaper I, 9 read both H and I, 11 read both H and T, 8 read both T and I, 3 read all the three newspaper find
- The number of people who read atleast one of the newspapers.
 - The number of people who read exactly one newspaper.
33. Let $z_1 = 2 - i, z_2 = -2 + i$. Find
- $Re\left(\frac{z_1 z_2}{z_1}\right)$,
 - $Im\left(\frac{1}{z_1 z_1}\right)$
34. In a survey it was found that 21 people liked product A, 26 liked product B and 29 liked product C. if 14 people liked products A and B, 12 people liked products C and A, 14 people liked product B and C and 8 liked all the three products. Find how many liked product C only.
35. What is the number of ways of choosing 4 cards from a pack of 52 playing cards? In how many of these
- four cards are of the same suit,
 - four cards belong to four different suits,
 - two are red cards and two are black cards,
- OR
- Find the number of permutations of the letters of the word ALLAHABAD
 - How many numbers lying between 100 and 1000 can be formed with the digits 0, 1, 2, 3, 4, 5, if the repetition of the digits is not allowed?

SECTION E

36. Case Study I:

In a library, 25 students read physics, chemistry and mathematics books. It was found that 15 students read mathematics, 12 students read physics while 11 students read chemistry. 5 students read both mathematics and chemistry, 9 students read physics and mathematics. 4 students read physics and chemistry and 3 students read all three subject books.

- (i). How many number of students who reading only chemistry?
- (ii). How many number of students who reading only mathematics?
- (iii). How many number of students who reading only one of the subjects?
- (iv). How many number of students who reading atleast one of the subject?

37. Case study II:

A state cricket authority has to choose a team of 11 members, to do it so the authority asks 2 coaches of a government academy to select the team members that have experience as well as the best performers in last 15 matches. They can make up a team of 11 cricketers amongst 15 possible candidates. In how many ways can the final eleven be selected from 15 cricket players if:

- (i). There is no restriction?
- (ii). one of them must be included
- (iii). Two of them being leg spinners, one and only one leg spinner must be included?
- (iv). If there are 6 bowlers, 3 wicket-keepers, and 11 batsmen in all. The number of ways in which a team of 4 bowlers, 2 wicket-keepers, and 5 batsmen can be chosen.

38. Case Study III:

In a company, 100 employees offered to do a work. In out of them, 10 employees offered ground floor only, 15 employees offered first floor only, 10 employees offered second floor only, 30 employees offered second floor and ground floor to work, 25 employees offered first and second floor, 15 employees offered ground and first floor, 60 employees offered second floor.

- (i). Find the number of employees who offered all three floors.
- (ii). Find the number of employees who offered ground floor.
- (iii). Find the number of employees who offered first floor.
- (iv). The number of employees who did not offer any of the above three floors.

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