

**ST. PBN PUBLIC SCHOOL**  
**ANNUAL EXAMINATION (SAMPLE PAPER)**  
**CLASS – XI**  
**SUBJECT – ENGLISH**

**TIME- 3 HRS.**

**MM. 80**

**GENERAL INSTRUCTIONS:**

1. ALL QUESTIONS ARE COMPULSORY.
2. FOLLOW THE INSTRUCTIONS GIVEN WITH ALL QUESTIONS.

**SECTION A READING (26 MARKS)**

**Q1. Read the following passage carefully and answer the questions that follow. 12M**

Travel is a bug that was in me when I was born, probably inherited from my father. In 24 years of travelling widely through India, I have been most fascinated by those little islands that dot the Bay of Bengal off the East Coast of India. Yes, I am talking about the Andaman Islands. Andamans somehow seemed almost sinister, with images of being haunted, bleak and scary, until my parents actually returned from a trip to Port Blair and told us about these serene islands. We immediately awaited the first opportunity to take a break and check them out. Finally, the D-Day came and we were all ready. We boarded the aircraft and to our surprise found that there were several empty seats. On enquiry, we learnt that all supplies to the Andamans including newspaper and meat go from the mainland and so there is always more cargo and less people.

Port Blair airport is a small, old airport that was constructed in 1947. On my way to the hotel I noticed that there are none of the usual autorickshaws that noisily wend their way through most Indian towns. There was only one traffic signal in the entire town and the roads were more ups-and-downs than level. This was all surprising for a person like me who has lived in the coastal towns of Chennai and Mumbai. The colour of the sea was an unpolluted blue, a colour that I had not seen in any of the beaches in India. It was calm and beautiful. I was thrilled with the fact that we were going to spend 10 entire days there. All we had to do was sit in the open restaurant, look at the sea, enjoy the cool breeze and feel good.

The Andaman Islands are a group of several islands, so most of our sightseeing was by boats. There are a total of more than 356 islands there. Even the oldest boatman, Rathnarn, had seen only 200 of them. I figured that 10 days was surely not enough to get a full picture of this place, so I started to store every sight, every sound and every smell. The sound and light show at the jail sent a shiver down my spine. (This trip was before the movie 'Kalapani' was released). The realisation that those who fought for our Independence had lived, struggled, suffered and even died here left an impact.

a) On the basis of your reading of the above passage, answer the following (1×6=6) questions by choosing the correct option.

- (i) What kind of a passage is this?
- (a) Fiction
  - (b) Travelogue
  - (c) Persuasive

(d) Biography

(ii) Why was the author interested in taking a trip to Andaman Islands?

- (a) It had a haunted, bleak and scary image.
- (b) As his parents had not recently taken a trip there.
- (c) He loved travelling.
- (d) He was largely fascinated by what his parents told him about the islands.

(iii) Why was the author surprised when he reached Port Blair?

- (a) The airport was very big.
- (b) There was no traffic signal in the entire town.
- (c) Living in a busy city, he had never expected such a town.
- (d) None of the above.

(iv) What is the meaning of the phrase 'sent a shiver down my spine'?

- (a) Feel very frightened
- (b) Feel very excited
- (c) Feel very relaxed
- (d) None of these

(v) The synonyms of 'sinister' in the second paragraph is ...

- (a) threatening
- (b) left side
- (c) benign
- (d) good

(vi) One thing that left a major impact on the author was ...

- (a) the serenity of the place
- (b) the wholesome experience
- (c) vastness of the islands
- (d) the realisation that freedom fighters had lived, struggled and died there

b) On the basis of your reading of the passage, answer the following questions briefly.

- (i) Why were there several empty seats in the aircraft?
- (ii) What was unusual about Port Blair?
- (iii) How did the author describe the beaches?
- (iv) Why was most of their sightseeing by boats?
- (v) The word ..... in para 1 means 'provisions'.
- (vi) The word in the passage which is an antonym of 'contaminated' is..... (para 2)

**Q2. Read the text carefully and answer the questions: 8M**

1. Millions of tons of small waste from plastic bags, bottles and clothes in the world's ocean present a serious threat to human health and marine environment. This is a warning issued by the U.N. in a report on the most dangerous environmental problem facing the world today. Global plastic production has increased considerably in years nearly by 38%.

2. A poor waste management means when we have finished with our takeaways contains cigarette butts and party balloons, they are worn down into trillions of even small particles by the waves. Therefore, there is a growing presence of these micro plastic the world's oceans.

3. It was estimated in 2010 that millions of tons of plastic was washed into the sea since shown up in the stomachs of whales, plankton and other marine life. Richard Thompson, professor of marine biology said that in laboratory experiments the proof that micro plastic can cause harm to organisms.

4. More than a quarter of all fish now contained plastic, according to a recent study which analysed the guts of fish sold in California. Scientists fear that chemicals in plastic and other chemicals which attach themselves to plastic in natural environment could each cause poisoning and many disorders in marine life if consumed in huge quantities.

5. Even humans could be adversely affected by the plastic. People could even be breathing in plastic micro-particles suspended in the air with the risk of harmful effects on the lungs similar to air pollution.

6. Volunteers around the world collect trash and tally up what they find on the beach in Ocean Conservancy's Annual International Coastal Cleanup. The result item-by-item, location-by-location Ocean Trash Index provides the only snapshot of marine debris littering coasts and waterways around the world, according to Ocean Conservancy.

7. Boya Slat, a Dutch student has developed a technology that could sift dangerous plastic particles out of the ocean and sell them for profit or recycling. Richard Thompson recommended that people avoid using products with micro beads and to make sure they dispose of all plastic products in an appropriate way by, if possible.



i. Select the option that is true for the two statements given below.

(1) More than a quarter of all fish now have plastics present in them.

(2) Millions of tons of plastic waste is present in the world's oceans.

1. (1) is the result of (2)

2. (1) is the reason for (2)

3. Both (1) and (2) are true

4. (1) contradicts (2)

ii. According to the passage, Richard Thompson is a \_\_\_\_\_.

iii. \_\_\_\_\_ provides the only snapshot of marine debris littering coasts and waterways.

iv. Through what does the cigarette butts and party balloons worn down into smaller particles?

v. We can find out that more than a quarter of all fish contained plastics in them by:

1. the stark warning issued by the UN in a report on the most dangerous environmental problems facing the world today.

2. collecting trash and tallying up what they find each day.

3. laboratory experiments performed by Richard Thompson a profession marine biology.

4. analysing the fish sold in California.

vi. Choose the correct set of statement which is NOT TRUE.

(I) Plastic could have similar effects like car fumes.

(II) Chemicals which attach themselves to plastic in natural environment could cause poisoning in marine life.

(III) Humans will never be adversely affected by the plastic.

(IV) In 2001, Millions of tons of plastic was washed into the sea.

(V) There is a growing presence of micro plastics in the world's oceans.

1. (II), (V)

2. (I), (V)

3. (I), (II)

4. (III), (IV)

vii. What amount of paper bags in the index are diffused into the oceans?

viii. Fill in the blank with with the correct option.

There are \_\_\_\_\_ beverage cans found in the index.

1. 337,865

2. 339,875

3. 339,445

4. 333,347

**Q3. Read the passage carefully. 8M**

1. Conversation is indeed the most easily teachable of all arts. All you need to do in order to become a good conversationalist is to find a subject that interests you and your listeners. There are, for example, numberless hobbies to talk about. But the important thing is that you must talk about other fellow's hobby rather than your own. Therein lies the secret of your popularity. Talk to your friends about the things that interest them, and you will get a reputation for good fellowship, charming wit, and a brilliant mind. There is nothing that pleases people so much as your interest in their interest.

2. It is just as important to know what subjects to avoid and what subjects to select for good conversation. If you don't want to be set down as a wet blanket or a bore, be careful to avoid certain unpleasant subjects. Avoid talking about yourself, unless you are asked to do so. People are interested in their own problems not in yours. Sickness or death bores everybody. The only one who willingly listens to such talk is the doctor, but he gets paid for it.

3. To be a good conversationalist you must know not only what to say, but how also to say it. Be mentally quick and witty. But don't hurt others with your wit. Finally try to avoid mannerism in your conversation. Don't bite your lips or click your tongue, or roll your eyes or use your hands excessively as you speak.

4. Don't be like that Frenchman who said, "How can I talk if you hold my hand?"

**3.1 Make notes on the contents of above paragraph, using abbreviations. Supply a suitable title also. 5M**

**3.2 Make a summary of the passage. 3M**

**SECTION – B GRAMMAR AND CREATIVE WRITING (23 MARKS)**

Q.4 Fill in the blanks with correct form of the verb.

1. After Howard \_\_\_\_\_ his studies he intends to work in his father's company.

(FINISH)

2. I \_\_\_\_\_ the instructions on the test sheet when the headmaster came in and wished all of us good luck. (READ)

3. By the time I finish my thesis I \_\_\_\_\_ on it for over three years. (WORK)

4. Ancient Greek athletes received a wreath of olives after they \_\_\_\_\_ a race. (win)

**Q5. Rearrange the following words or phrases to make meaningful sentences: 3M**

1. a/ lover/ is/ animal/ passionate/ he

2. campaigned/ birds/ he/ caged/ free/ to

3. to/ her/ first/ Sudha/ stand/ hard/ class/ is/ studying/ in

**Q6.** You are Ram/Rajani. Draft a classified advertisement, in not more than 50 words, to be published in India Times for the sale of a used motor car giving all the necessary details. You can be contacted at 12345679. 3M

**OR**

You are Vikram/Sonia, an Honours's graduate in history with specialization in Medieval India. You are well acquainted with places of historical interest in Delhi, Agra and Jaipur. You are looking for the job of tourist guide. Write an advertisement in about 50 words for the situations wanted column of a local newspaper. Your contact no. 999751234.

**Q7.** Design a poster on the topic "Say No To Plastics." 3M

**OR**

Design a poster on the topic "Save Water."

**Q8.** As Mukul / Mahima of Alps Public School, write a speech to be delivered in school assembly highlighting the importance of cleanliness suggesting that the state of cleanliness reflects the character of its citizens. (150-200 words) 5M

**OR**

You are Ali/Alia, Head girl / Head boy of your school. You are deeply disturbed by the rising cases of aggressive behaviour of students in your school. You decide to speak during the morning assembly about it. Write a speech on 'Indiscipline in Schools'. (150 – 200 words)

**Q9.** "Academic excellence is the only requirement for a successful career." Write a debate either for or against the motion. (120 – 150 words) 5M

**OR**

Social media (Facebook, Twitter, etc.) is being used to create disaffection in society.' Write a debate in 120-150 words either for or against the motion. (7marks)

### **SECTION C LITERATURE (31 MARKS)**

**Q10.** Read the extract given below and answer any two of the questions that follow. 3M

When did my childhood go?

Was it the time I realised that adults were not all they seemed to be,

They talked of love and preached of love,

But did not act so lovingly,

Was that the day!

1. Who is 'my' in the above lines?
2. Why is 'I' confused?
3. Who talk of love and preach of love?

**Q11. Read the given passage and answer the questions that follow. (1x3=3M)**

He was just a teenager when he died. The last heir of a powerful family that had ruled Egypt and its empire for centuries, he was laid to rest laden with gold and eventually forgotten. Since the discovery of his tomb in 1922, the modern world has speculated about what happened to him, with murder being the most extreme possibility.

1. Who is the author of these lines ?
2. Who is 'he' in these lines ?
3. What has happened to 'he' recently?

**Q12. Read the given passage and answer the questions that follow. (1x4 = 4M)**

When the curtain rises it is an afternoon in early autumn and the stage can be well lit. Mrs Pearson at right, and Mrs Fitzgerald at left, are sitting opposite each other at the small table, on which are two teacups and saucers and the cards with which Mrs Fitzgerald has been telling Mrs Pearson's fortune. Mrs Pearson is a pleasant but worried-looking woman in her forties. Mrs Fitzgerald is older, heavier and a strong and sinister personality. She is smoking. It is very important that these two should have sharply contrasting voices.

1. What is the name of the play?
2. Where is the scene set ?
3. How are Mrs. Pearson and Mrs. Fitzgerald related?
4. What was the contrast between the voices of the two ladies?

**Q13. Answer the following questions in 40-50words. (ANY TWO) 3x2=6M**

1. Mention how the sparrows expressed their sorrow when the author's grandmother died.
2. What was the narrator's experience when she entered the house?
3. Explain the statement, "King Tut is one of the first mummies to be scanned — in death, as in life ..."

**Q14. Answer any one of the following questions in 40-50words. 3x1=3M**

1. What was Mr Pearson called behind his back in the club? Why was he called so?
2. What efforts did Andrew make to revive Susan Morgan? (Birth)

**Q15. Answer any one of the following question (ANY ONE) in about 100-120 words. (6x1=6M)**

How did the narrator and his companions save the boat from sinking?

**OR**

Write the character sketch of the grandmother.

**Q16. Answer any one of the following question (ANY ONE) in about 100-120 words. (6x1=6M)**

Compare and contrast the characters of Mrs Fitzgerald and Mrs Pearson. Who do you admire and why? (Mother's Day)

**OR**

How did the narrator come to know about Mrs Dorling and the address where she lived?





4	The momentum of a system is conserved (a) Always (b) Never (c) In the absence of an external force on the system (d) None of the above	1
5	If a long spring is stretched by $0.02\text{ m}$ , its potential energy is $U$ . If the spring is stretched by $0.1\text{ m}$ , then its potential energy will be (a) $\frac{U}{5}$ (b) $U$ (c) $5U$ (d) $25U$	1
6	If radius of earth is $R$ then the height ' $h$ ' at which value of ' $g$ ' becomes one-fourth is (a) $\frac{R}{4}$ (b) $\frac{3R}{4}$ (c) $R$ (d) $\frac{R}{8}$	1
7.	Two wires of copper having the length in the ratio $4 : 1$ and their radii ratio as $1 : 4$ are stretched by the same force. The ratio of longitudinal strain in the two will be (a) $1 : 16$ (b) $16 : 1$ (c) $1 : 64$ (d) $64 : 1$	1
8.	The surface tension of a liquid at its boiling point (a) Becomes zero (b) Becomes infinity (c) is equal to the value at room temperature (d) is half to the value at the room temperature	1
9.	Water has maximum density at (a) $0^\circ\text{C}$ (b) $32^\circ\text{F}$ (c) $-4^\circ\text{C}$ (d) $4^\circ\text{C}$	1
10.	The coefficient of superficial expansion of a solid is $2 \times 10^{-5}/^\circ\text{C}$ . Its coefficient of linear expansion is (a) $4 \times 10^{-5}/^\circ\text{C}$ (b) $3 \times 10^{-5}/^\circ\text{C}$ (c) $2 \times 10^{-5}/^\circ\text{C}$ (d) $1 \times 10^{-5}/^\circ\text{C}$	1

11.	A cycle tyre bursts suddenly. This represents an (a) Isothermal process                      (b) Isobaric process (c) Isochoric process                      (d) Adiabatic process	1
12.	Which is incorrect (a) In an isobaric process, $\Delta p = 0$ (b) In an isochoric process, $\Delta W = 0$ (c) In an isothermal process, $\Delta T = 0$ (d) In an isothermal process, $\Delta Q = 0$	1
13.	The temperature at which the root mean square velocity of a molecule will be doubled than at $100^\circ\text{C}$ (a) $1219^\circ\text{C}$ (b) $1492^\circ\text{K}$ (c) $400^\circ\text{C}$ (d) $400\text{ K}$	1
14.	The amplitude of a particle executing S.H.M. with frequency of $60\text{ Hz}$ is $0.01\text{ m}$ . The maximum value of the acceleration of the particle is (a) $144\pi^2\text{m/sec}^2$ (b) $144\text{m/sec}^2$ (c) $\frac{144}{\pi^2}\text{m/sec}^2$ (d) $288\pi^2\text{m/sec}^2$	1
15.	The equation of a sound wave is $y = 0.0015 \sin(62.8x + 316t)$ The wavelength of this wave is (a) $0.2\text{ unit}$ (b) $0.1\text{ unit}$ (c) $0.3\text{ unit}$ (d) Cannot be calculated	1
16.	<b>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.</b> <b>a) Both A and R are true and R is the correct explanation of A</b> <b>b) Both A and R are true and R is NOT the correct explanation of A</b> <b>c) A is true but R is false</b> <b>d) A is false and R is also false</b> <b>ASSERTION:</b> A player lowers his hands while catching a cricket ball and suffers less reaction force <b>REASON:</b> For the given momentum of the ball the reaction force inversely proportional to duration of catching time.	1

17.	<p>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.</p> <p>a) Both A and R are true and R is the correct explanation of A  b) Both A and R are true and R is NOT the correct explanation of A  c) A is true but R is false  d) A is false and R is also false</p> <p><b>ASSERTION:</b>  The torque of a given force is maximum when the angle between force and position vector of the point where force is acting is <math>90^\circ</math>.</p> <p><b>REASON:</b>  Torque and force both are the vector quantity.</p>	1
18.	<p>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.</p> <p>a) Both A and R are true and R is the correct explanation of A  b) Both A and R are true and R is NOT the correct explanation of A  c) A is true but R is false  d) A is false and R is also false</p> <p><b>ASSERTION:</b>  A beaker is completely filled with water at <math>4^\circ\text{C}</math>. It will overflow, both when heated or cooled.</p> <p><b>REASON:</b>  There is expansion of water below and above <math>4^\circ\text{C}</math>.</p>	1

**SECTION B**

19.	<p>The position of a particle is given by <math>s^2 = t^3 - 5t^2 + 6t + 10k</math>. Where t is in seconds. Find the velocity <math>\vec{v}(t)</math> and acceleration <math>\vec{a}(t)</math> of the particle at (i) <math>t = 1\text{s}</math>. (ii) <math>t = 3\text{s}</math>.</p>	2
20.	<p>The sum and difference of two vectors are equal in magnitude. Show that they are mutually perpendicular to each other.</p> <p style="text-align: center;">Or</p> <p>Find the angle of projection in projectile motion for which horizontal range and maximum height are equal.</p>	2
21.	<p>State the number of significant figures of following-</p> <p>(i) 0.07m (ii) 2.604km (iii) 3.9040N (iv) <math>2.06 \times 10^{-9}\text{s}</math></p>	2
22.	<p>A particle performs uniform circular motion with an angular momentum L. If the frequency of particle's motion is doubled and its K.E is halved, what happens to the angular momentum?</p>	2

23.	Find expression of work done in an isothermal process in terms of initial and final volume.	2
24.	Draw a typical stress strain curve for a ductile metal and mark the points which refer to proportional limit, Elastic limit and fracture point.	2
25.	Write Newton's formula for the speed of sound in air. Explain how is it corrected by Laplace.	2

### SECTION C

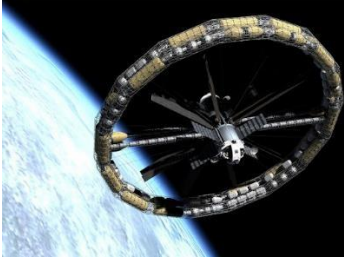
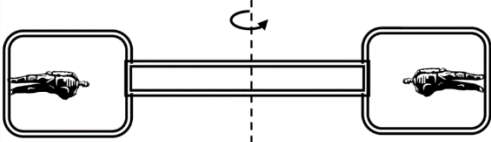
26.	State the principle of superposition of waves. Show that only odd harmonics can be produced in air column with one end closed and other open.	3
27.	Find the expression of the time period T of a pendulum for small amplitude of effective length 'l' and mass of the bob 'm', acceleration due to gravity 'g'.	3
28.	Define Degree of freedom. If degree of freedom 'f', $\gamma$ is the ratio of $C_p$ , $C_v$ . Show that $\gamma = 1 + \frac{2}{f}$ <p style="text-align: center;">OR</p> Show that the average kinetic energy per molecule is directly proportional to the absolute temperature of the gas.	3
29.	Define Torque and Angular momentum. Obtain relation between them.	3
30.	If the frequency of a stretched string depends upon length of string (l), tension in the string (T) and mass per unit length ( $\mu$ ) of the string. Find expression for frequency of vibration of string using method of dimensions.	3

### SECTION D

31.	(i) Draw velocity – time graph for uniformly accelerated motion. Obtain the three equations of motion graphically. (ii) A ball is thrown vertically upwards with a velocity of 20 m/s from the top of a building. The height of the point from where the ball is thrown is 25 m from the ground. (a) How high will the ball rise? and (b) how long time will it takes before the ball hits the ground? ( $g = 10 \text{ m/s}^2$ ) <p style="text-align: center;">OR</p> (i) Define limiting friction and angle of friction. (ii) A body of mass 5 kg is sliding on a surface inclined at an angle $60^\circ$ with the horizontal. Calculate the acceleration of the body and angle of friction. The coefficient of kinetic friction between the body and the surface is 0.5 and $g = 10 \text{ ms}^{-2}$	5
32.	What is perfectly elastic collision? Obtain an expression for the final velocities for the bodies undergoing elastic collision in one dimension. Also prove that if the masses are equal after collision the velocities get interchanged. <p style="text-align: center;">OR</p> (i) State and prove Work-Energy Theorem?	5

	(ii) If the momentum of a body increases by 10%, find how much percent its kinetic energy will increase?	
33.	<p>(i) State Stoke's law for the viscous drag experienced by the spherical body falling through a viscous liquid.</p> <p>(ii) Why does a spherical body achieve terminal speed?</p> <p>(iii) On what factors does the terminal speed of a spherical body falling in a viscous medium depend?</p> <p>(iv) Give one example each of motion around us with (a) Positive (b) Negative terminal velocity.</p> <p style="text-align: center;">OR</p> <p>(A) State and prove Bernoulli's theorem with the help of a neat and labeled diagram.</p> <p>(B) It is advised not to stand near the edge of platform when the fast-moving train is approaching. Give reason</p>	5

### SECTION E

34.	<p><b>Case Study:</b>  <i>Read the following paragraph and answer the questions.</i></p> <p>In the movie "2001: A Space Odyssey", a rotating spacecraft provides artificial gravity. The people would be walking inside the circle; their feet toward the exterior and their head toward the centre; the floor and ceiling would curve upwards. The radius of the outer rim of the space 'wheel' is 1.0 km.</p>   <p>(i) What is the value of artificial acceleration at the center of the aircraft ?</p> <p>(ii) Calculate the angular velocity for the spacecraft to generate an artificial acceleration due to gravity equals to <math>10 \text{ m/s}^2</math>.</p> <p>(iii) What is its equivalent no. of revolutions per min?</p> <p style="text-align: center;">OR</p> <p>(iii) calculate the tangential speed of the wheel of this space craft?</p>	4
-----	--	---

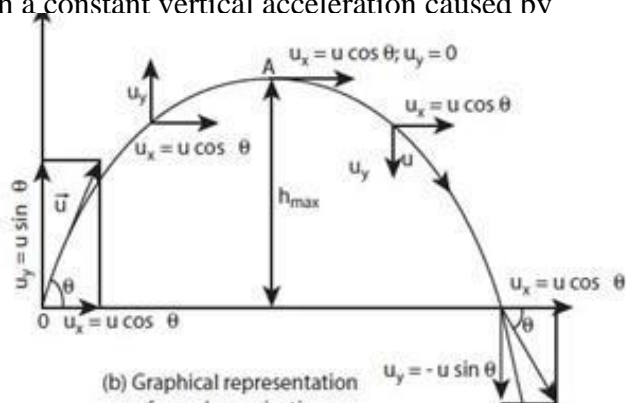
35.

**Case Study:****Read the following paragraph and answer the questions.**

Projectile Motion, by definition, is the motion of an object thrown or projected into the air, only subject to acceleration due to gravity. The motion has a constant horizontal velocity combined with a constant vertical acceleration caused by



(a) Water is ejected out of a pipe held obliquely



(b) Graphical representation of angular projection

- (i) At what point the velocity of projectile will be minimum during its projectile motion?
- (ii) What is the trajectory of projectile in angular projection?
- (iii) Show that the horizontal range will be same for angle of projection  $\theta$  and  $(90^\circ - \theta)$

OR

- (iii) Show that the horizontal range will be same for pair of angles of projection  $(45^\circ + \theta)$  and  $(45^\circ - \theta)$

4

**St. PBN PUBLIC SCHOOL**  
**ANNUAL EXAMINATION (SAMPLE PAPER)**  
**CLASS-XI**  
**SUBJECT - CHEMISTRY**

**TIME: 3 Hours**

**MM: 70**

**General Instructions:**

- a) There are 33 questions in this question paper with internal choice.
- b) SECTION A consists of 16 multiple-choice questions carrying 1 mark each.
- c) SECTION B consists of 5 very short answer questions carrying 2 marks each.
- d) SECTION C consists of 7 short answer questions carrying 3 marks each.
- e) SECTION D consists of 2 case- based questions carrying 4 marks each.
- f) SECTION E consists of 3 long answer questions carrying 5 marks each.
- g) All questions are compulsory.

**SECTION-A**

1. How many significant figures are there in 3.070 & 0.0025?  
(A) 2 & 5 (B) 4 & 2  
(C) 1 & 2 (D) 6 & 4
2. How many number of atoms are present in 52 u of He?  
(A) 11 (B) 15 (C) 13 (D) 12
3. Ethyne on passing through red hot iron tube at 873K undergoes cyclic polymerization. Three molecules of ethyne polymerise to form:  
(A) ethane (B) ethane (C) benzene (D) ethanol
4. Which element is isoelectronic with  $\text{Na}^+$ ?  
(A) Ne (B) He (C)  $\text{K}^+$  (D) C
5. The element with atomic number 57 belongs to:  
(A) s-block (B) p-block  
(C) d-block (D) f-block
6. Hydrogen bonds are formed in many compounds, e.g.,  $\text{H}_2\text{O}$ , HF,  $\text{NH}_3$ . The boiling point of such compounds depends to a large extent on the strength of hydrogen bond and the number of hydrogen bonds. The correct decreasing order of the boiling points of above compounds is:  
(A)  $\text{HF} > \text{H}_2\text{O} > \text{NH}_3$  (B)  $\text{H}_2\text{O} > \text{HF} > \text{NH}_3$   
(C)  $\text{NH}_3 > \text{HF} > \text{H}_2\text{O}$  (D)  $\text{NH}_3 > \text{H}_2\text{O} > \text{HF}$
7. Arrange the following in decreasing order of their boiling points.  
(A) n-Butane (B) 2-Methylbutane (C) n-Pentane (D) 2,2-Dimethylpropane  
(a)  $A > B > C > D$  (b)  $B > C > D > A$   
(c)  $D > C > B > A$  (d)  $C > B > D > A$
8. Which of the following cannot be represented by resonance structures?  
(a) Dimethyl ether (b) Nitrate anion  
(c) Carboxylate anion (d) Toluene
9. Arrange the following in the increasing order of electronegativity.  
a)  $sp^2 < sp < sp^3$  b)  $sp^3 < sp^2 < sp$   
c)  $sp < sp^2 < sp^3$  d)  $sp^3 < sp < sp^2$
10. What will be the value of pH of  $0.01 \text{ mol dm}^{-3} \text{CH}_3\text{COOH}$  ( $K_a = 1.74 \times 10^{-5}$ )?  
(A) 3.4 (B) 3.6 (C) 3.9 (D) 3.0



11. Which one is more stable cation?  
 (A)  $\text{CH}_3)_3\text{C}^+$  (B)  $\text{CH}_3\text{C}^+\text{H}_2$  (C)  $\text{C}^+\text{H}_3$  (D) All of these
12. Which of the following is not an example of redox reaction?  
 (A)  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$   
 (B)  $\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$   
 (C)  $2\text{K} + \text{F}_2 \rightarrow 2\text{KF}$   
 (D)  $\text{BaCl}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{HCl}$

### **ASSERTION-REASON BASED 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) A and R both are correct, and R is the correct explanation of A  
 (b) A and R both are correct, 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.

13. Assertion (A): Among the two O-H bonds in  $\text{H}_2\text{O}$  molecule, the energy required to break the first O-H bond and the other O-H bond is the same.

Reason (R): This is because the electronic environment around oxygen is the same even after breakage of one O-H bond.

14. Assertion (A): Work and internal energy of a system are state functions.

Reason (R): The sum of  $q + w$  is a state function.

15. Assertion (A): Pent-1-ene and pent-2-ene are position isomers.

Reason (R): Position isomers differ in the position of functional group or substituent.

16. Assertion (A): Cyclobutane is less stable than cyclopentane

Reason (R): Presence of bent bonds causes loss of orbital overlap.

### **Section-B**

17. (a) Which is more informative? Empirical formula or molecular formula.

(b) Calculate the number of carbon atoms in 34.20g of  $\text{C}_6\text{H}_{12}\text{O}_6$ .

18. How would you explain the fact that first ionisation enthalpy of sodium is lower than that of magnesium but its second ionisation enthalpy is higher than that of magnesium?

19. Consider the following species:

$\text{N}^{3-}$ ,  $\text{O}^{2-}$ ,  $\text{F}^-$ ,  $\text{Na}^+$ ,  $\text{Mg}^{2+}$  and  $\text{Al}^{3+}$

(a) What is common in them?

(b) Arrange them in the order of increasing ionic radii.

20. (a) Name the hybridisation involved in:

(i)  $\text{C}_2\text{H}_2$  (ii)  $\text{SF}_6$

(b) Why dipole moment of  $\text{CO}_2$  is zero while  $\text{H}_2\text{O}$  is a polar though both have similar formula?

OR

(a) Calculate the bond order for  $\text{N}^{2+}$  molecule.

(b) Water molecule has bent structure whereas  $\text{BeCl}_2$  has a linear structure. Give Reason.

21. (a) What will be equilibrium constant for the reverse reaction  
(b) At equilibrium, the concentrations of  $N_2 = 4.2 \times 10^{-3}M$ ,  $O_2 = 5.3 \times 10^{-3}M$  and  $NO = 3.8 \times 10^{-3}M$  in a sealed vessel at 800K. What will be  $K^c$  for the reaction.

### Section-C

22. 20g of  $CaCO_3$  and 20 g of  $H_2SO_4$  react to give  $CaSO_4$  along with water and  $CO_2$ .

- (a) Determine the limiting reagent for the above reaction.  
(b) How much  $CaSO_4$  will be formed?  
(c) If 1 mole of gas occupies 22.4 L at STP then calculate the volume of  $CO_2$  evolved in the above reaction. [Ca = 40, C = 12, O = 16, H = 1, S = 32]

23. Identify the reagents shown in bold in the following equations as nucleophiles or electrophiles:

- (a)  $CH_3COOH + HO^- \rightarrow CH_3COO^- + H_2O$   
(b)  $CH_3COCH_3 + CN^- \rightarrow (CH_3)_3C(CN)(OH)$   
(c)  $C_6H_6 + CH_3CN \rightarrow C_6H_5COCH_3$

24.(a) Using the VSEPR theory, identify the type of hybridization and draw the structure of  $OF_3$ . What are oxidation states of O and F?

(b)  $MgCl_2$  is linear, but  $SnCl_2$  is angular. Why?

25. Two moles of an ideal gas initially at  $27^\circ C$  and 1 atm pressure are compressed isothermally and reversibly till the final pressure of the gas 10 atm. Calculate the values of q, W and  $\Delta U$  for this process.

26. For the following equilibrium,  $K = 6.3 \times 10^{14}$  at 1000 K.  $NO(g) + O_3 \rightleftharpoons NO_2(g) + O_2(g)$  Both the forward and reverse reactions in the equilibrium are elementary bimolecular reactions. What is  $K_c$  for the reverse reaction?

27. Explain why?

- (a) Reaction  $FeSO_4(aq) + Cu(s) \rightarrow CuSO_4(aq) + Fe(s)$  does not occur.  
(b) Zinc can displace copper from aqueous  $CuSO_4$  solution but Ag can not.  
(c) Solution of  $AgNO_3$  turns blue when copper rod is immersed in it.

28. Why do alkenes prefer to undergo electrophilic addition reaction while arenes prefer electrophilic substitution reaction? Explain.

### Section-D

29. Read the following passage and answer the following questions:

A student is given the following elements: Sodium (Na), Magnesium (Mg), and Aluminum (Al). The student is asked to place them in the periodic table and predict their properties.

A student is given two unknown metals, X and Y, and is told that one is an alkali metal and the other is an alkaline earth metal. The student performs some experiments and finds that X reacts violently with water, while Y reacts slowly with water.

1. Identify which metal is from Group 1 and which is from Group 2. Justify your answer.
2. What makes noble gases chemically inert?
3. Which element has the highest ionization energy? Explain based on periodic trends.

30. Read the following passage and answer the following questions:

A student prepares hot coffee and pours it into a thermos flask. The flask is well insulated, preventing heat exchange with the surroundings. The student then adds sugar to the coffee and stirs it.

1. What type of thermodynamic system is the coffee in the thermos? Explain.
2. State the first law of thermodynamics and apply it to this system.
3. If the flask is opened and heat escapes, which type of system does it become?

### Section-E

31. Attempt any five of the following:

- (a) What is de Broglie wavelength for an electron with light velocity?
- (b) What is angular momentum of electron in 5th shell?
- (c) What is the relation between probability of finding an electron and the orbital wave function?
- (d) Can we apply Heisenberg's uncertainty principle to a stationary electron? Why or why not?
- (e) Write the maximum number of electron in a sub-shell with  $l = 3$  and  $n = 4$ .
- (f) Write the maximum number of electron that can be associated with the following set of quantum numbers?

$$n = 3, l = 1 \text{ and } m_l = -1$$

- (g) Write the maximum number of electron that can be accommodated in an atom in which the highest principal quantum number value is 4.

32.(a) Why is benzene extra ordinarily stable though it contains three double bonds?

(b) In the presence of peroxide, addition of HBr to prepare propene takes place according to anti Markovnikov's rule but peroxide effect is not seen in the case of HCl and HI. Explain.

(c) How will you convert: Acetylene to chlorobenzene

OR

(a) An alkene 'K' on ozonolysis gives a mixture of ethanal and pentan-3-one. Write structure and IUPAC name of 'A'.

(b) For the following compounds, write structural formulas and IUPAC names for all possible isomers having the number of double or triple bond as indicated:

(i)  $C_4H_8$  (one double bond)

(ii)  $C_5H_8$  (one triple bond)

33.1. Define structural isomerism and resonance with suitable examples.

2. Explain the following types of organic reactions with examples:

Substitution reaction ,Addition reaction ,Elimination reaction

3. Differentiate between nucleophilic and electrophilic substitution reactions with suitable examples.
4. Define Inductive effect and Mesomeric effect with examples.
5. How does hybridization affect the bond length and bond strength in alkanes, alkenes, and alkynes?

**ST. PBN PUBLIC SCHOOL**  
**ANNUAL EXAMINATION (SAMPLE PAPER)**  
**CLASS - XI**  
**MATHEMATICS**

**TIME: 3 Hours**

**MM: 80**

**NAME: \_\_\_\_\_**

**DATE: \_\_\_\_\_**

**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 two sets  $A \cup B = A$  iff

- |                     |                       |
|---------------------|-----------------------|
| (i) $B \subseteq A$ | (iii) $A \subseteq B$ |
| (ii) $A \neq B$     | (iv) $A = B$          |

2. The number of subsets of a set containing  $n$  elements is

- |            |                |
|------------|----------------|
| (i) $n$    | (iii) $2^n$    |
| (ii) $n^2$ | (iv) $2^n - 1$ |

3. The range of the function  $f(x) = \frac{x}{|x|}$  is

- |                               |                    |
|-------------------------------|--------------------|
| (i) $\mathbb{R} - \{0\}$      | (iii) $\{-1, 1\}$  |
| (ii) $\mathbb{R} - \{-1, 1\}$ | (iv) none of these |

4. Which of the following is incorrect?

- |                                  |                                   |
|----------------------------------|-----------------------------------|
| (i) $\sin \theta = -\frac{1}{5}$ | (iii) $\sec \theta = \frac{1}{2}$ |
| (ii) $\cos \theta = 1$           | (iv) $\tan \theta = 20$ .         |

5. The value of  $\tan \theta \sin\left(\frac{\pi}{2} + \theta\right) \cos\left(\frac{\pi}{2} - \theta\right)$  is

- |         |                                  |
|---------|----------------------------------|
| (i) 1   | (iii) $\frac{1}{2} \sin 2\theta$ |
| (ii) -1 | (iv) none of these               |

6. The value of  $(1 + i)(1 + i^2)(1 + i^3)(1 + i^4)$  is

- |        |                    |
|--------|--------------------|
| (i) 2  | (iii) 1            |
| (ii) 0 | (iv) none of these |

7. If  $\frac{3+2i\sin\theta}{1-2i\sin\theta}$  is a real number and  $0 < \theta < 2\pi$ , then  $\theta =$
- (i)  $\frac{\pi}{6}$  (iii)  $\frac{\pi}{2}$   
(ii)  $\frac{\pi}{3}$  (iv)  $\pi$
8. If  $x$  is a real number and  $|x| < 5$  then
- (i)  $x \geq 5$  (iii)  $-5 < x < 5$   
(ii)  $x \leq -5$  (iv)  $-5 \leq x \leq 5$
9. The number of words from the letter of the word 'BHARAT' in which B and H will never come together is
- (i) 360 (iii) 120  
(ii) 240 (iv) none of these
10. In how many ways can a committee of 5 be made out of 6 men and 4 women containing at least one woman?
- (i) 246 (iii) 186  
(ii) 222 (iv) none of these
11. The term without  $x$  in the expansion of  $(2x - \frac{1}{2x^2})^{12}$  is
- (i) 495 (iii) -7920  
(ii) -495 (iv) 7920
12. If 7<sup>th</sup> and 13<sup>th</sup> term of an A.P. be 34 and 64 respectively, then its 18<sup>th</sup> term is
- (i) 87 (iii) 89  
(ii) 88 (iv) 90
13. If second term of a G.P. is 2 and the sum of its infinite terms is 8, then its first term is
- (i)  $\frac{1}{4}$  (iii) 2  
(ii)  $\frac{1}{2}$  (iv) 4
14. The line segment joining the points (-3, -4) and (1, -2) is divided by y-axis in the ratio
- (i) 1:3 (iii) 3:1  
(ii) 2:3 (iv) 3:2
15. The angle between the lines  $2x-y+3=0$  and  $x+2y+3=0$  is
- (i)  $90^\circ$  (iii)  $45^\circ$   
(ii)  $60^\circ$  (iv)  $30^\circ$
16. The eccentricity of the ellipse  $4x^2+9y^2=36$  is
- (i)  $\frac{1}{2\sqrt{3}}$  (iii)  $\frac{1}{\sqrt{3}}$   
(ii)  $\frac{\sqrt{5}}{3}$  (iv)  $\frac{\sqrt{5}}{6}$
17.  $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}$  is equal to
- (i)  $na$  (iii)  $na^n$   
(ii) 1 (iv)  $na^{n-1}$

18. The mean deviation of the numbers 3, 4, 5, 6, 7 from the mean is
- (i) 25 (iii) 1.2  
(ii) 5 (iv) 0
19. Two dice are thrown simultaneously. The probability of obtaining total score of seven is
- (i)  $5/36$  (iii)  $8/36$   
(ii)  $6/36$  (iv)  $7/36$
20. A pack of cards contains 4 aces, 4 kings, 4 queens and 4 jacks. Two cards are drawn at random. The probability that at least one of them is an ace is
- (i)  $1/5$  (iii)  $1/9$   
(ii)  $3/16$  (iv)  $9/20$

### **Section B**

21. Find the domain and range of the function  $f(x) = \sqrt{9 - x^2}$ .
22. What is the number of ways of choosing 4 cards from a pack of 52 playing cards? In how many of these
- (i) Four cards of same suit  
(ii) Are face cards

Or

A committee of 7 has to be formed from 9 boys and 4 girls. In how many ways can this be done when the committee consists of:

- (i) Exactly 3 girls  
(ii) Atleast 3 girls
23. Find the distance of the point (3, -5) from the line  $3x - 4y - 26 = 0$ .
24. Evaluate:  $\lim_{x \rightarrow 0} \frac{\sin 4x}{\sin 2x}$ .

or

Evaluate:  $\lim_{x \rightarrow 2} \frac{3x^2 - x - 10}{x^2 - 4}$ .

25. Compute the derivative of  $f(x) = \sin^2 x$ .

### **Section C**

26. 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.
27. Line through the points (-2, 6) and (4, 8) is perpendicular to the line through the points (8, 12) and (x, 24). Find the value of x.
28. The coefficients of the  $(r-1)^{\text{th}}$ ,  $r^{\text{th}}$  and  $(r+1)^{\text{th}}$  terms in the expansion of  $(x+1)^n$  are in the ratio 1:3:5. Find n and r.

Or

Find a if the  $17^{\text{th}}$  and  $18^{\text{th}}$  terms of the expansion  $(2+a)^{50}$  are equal.

29.(i) Find the equation of the parabola which is symmetric about the y-axis and passes through the point (2, -3).

(ii) Find the equation of the ellipse, whose length of major axis is 20 and foci are (0, ±5).

30. Show that the points A (1, 2, 3), B (-1, -2, -1), C (2, 3, 2) and D (4, 7, 6) are vertices of a parallelogram ABCD, but it is not a rectangle.

Or

Find the lengths of the medians of the triangle with vertices A (0, 0, 6), B (0, 4, 0) and C (6, 0, 0).

31.(i) A die is rolled. Let E be the event “die shows 4” and F be the event “die shows even number”. Are E and F mutually exclusive?

(ii) A coin is tossed. If the outcome is head, a die is thrown. If the die shows up an even number, the dice is thrown again. What is the sample space for the experiment?

### **Section D**

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

Or

Prove that  $\frac{\cos 4x + \cos 3x + \cos 2x}{\sin 4x + \sin 3x + \sin 2x} = \cot 3x$ .

33. Solve the following system of inequality graphically

$$3x + 2y \leq 150$$

$$x + 4y \leq 80$$

$$x \leq 15, y \geq 0$$

34. The pth, qth and rth terms of an A.P are a, b, c respectively. Show that

$$(q - r)a + (r - p)b + (p - q)c = 0$$

Or

Let S be the sum, P be the product and R the sum of reciprocals of n terms in a G.P. prove that  $P^2 R^n = S^n$ .

35. Find the mean, variance and standard deviation using short cut method

Height	70-75	75-80	80-85	85-90	90-95	95-100	100-105	105-110	110-115
No of children	3	4	7	7	15	9	6	6	3

Or

Calculate mean, variance and standard deviation for the following distribution

Classes	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	3	7	12	15	8	3	2

### **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.

The number of employees who did not offer any of the above three floors.

.....

**St. PBN PUBLIC SCHOOL, GURUGRAM**  
**ANNUAL EXAMINATION ( SAMPLE PAPER)**  
**CLASS XI**  
**COMPUTER SCIENCE : 083**

**Time: 3 hours**

**M.M:70**

**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 (20 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. How many bytes are in 1 Kilobyte?

- |               |                |
|---------------|----------------|
| (a) 8 Bytes   | (c) 1024 Bytes |
| (b) 128 Bytes | (d) 256 Bytes  |

2. Convert  $(300)_{10}$  into Hexadecimal equivalent.

- |                  |                  |
|------------------|------------------|
| (a) $(12C)_{16}$ | (c) $(32A)_{16}$ |
| (b) $(4D)_{16}$  | (d) $(16B)_{16}$ |

3. Which of the following statements assigns the value 25 to the variable x in Python:

- |                       |                          |
|-----------------------|--------------------------|
| (a) $x \leftarrow 25$ | (c) $x := 25$            |
| (b) $x = 25$          | (d) $\text{int } x = 25$ |

4. The data or text enclosed with single quote, double quote or triple quote is known as \_\_\_\_\_.

- |            |                |
|------------|----------------|
| (a) String | (c) Tuple      |
| (b) List   | (d) Dictionary |

5. The interactive interpreter of python is termed as \_\_\_\_\_

- |                        |                         |
|------------------------|-------------------------|
| (a) Python Shell       | (c) Python Editor Mode  |
| (b) Python Script Mode | (d) Python Command Line |

6. \_\_\_\_\_ are diagrams that show the step by step solution to a given problem.

- |                |                  |
|----------------|------------------|
| (a) Pie Chart  | (c) Column Chart |
| (b) Flow Chart | (d) Bar Chart    |

7. Which of the following falls under utilities?

- a) Text editor
- b) Backup
- c) Disk defragmenter
- d) All of these

8. Which abandons the current iteration of the loop?

- (a) continue
- (b) break
- (c) stop
- (d) infinite

9. Identify the invalid identifiers from the given options.

- (a) 981a
- (b) a
- (c) a0
- (d) \_a0

10. Index of list starts from \_\_\_\_\_

- (a) 10
- (b) 0
- (c) 11
- (d) 110

11. Which of the following operator is used to concatenate the strings

- (a) +
- (b) \*
- (c) /
- (d) -

12. Dictionary has a Unique \_\_\_\_\_

- a) value
- b) key
- c) both
- d) none of these

13. When a person is harassed repeatedly by being followed, called or written to, he/she is a target of:

- (a) Bullying
- (b) Identity theft
- (c) Stalking
- (d) Phishing

14. Which of the following is not a cybercrime?

- (a) Denial of Service
- (b) Man in the Middle
- (c) Malware
- (d) None of the above

15. Which of the following is relational operator?

- a) =
- b) <=
- c) +=
- d) None of these

16. \_\_\_\_\_ software is made to perform a specific task

- a) System
- b) Application
- c) Utility
- d) None of these

**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 and 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):** Higher precedence operator is evaluated before the lower precedence operator.

**Reason (R):** For operators with equal precedence, the expression is evaluated from right to left.

**18. Assertion (A):** Data types are used to identify the type of data.

**Reason (R):** Data types are two types as numbers and strings.

### SECTION B

**(2x 7 = 14)**

**19. (i)** What will be the output of following code?

```
>>> print ("14<=46:", 14<=46)
```

**(ii)** What will be the output of the following snippet?

```
list1=[8,0,9,5]
```

```
print(list1[::-1])
```

(1+1)

**20. (i)** Write the python statement to type cast the float value of r = 98.40 into an integer type.

**(ii)** Which statement is used in python to terminate the infinite loop?

(1+1)

**21. (i)** Convert (ABCD)<sub>16</sub> to ( )<sub>2</sub>

**(ii)** Draw a truth table of XOR Gate.

(1+1)

### OR

State and Prove De Morgan's First law using truth table

(2)

**22.** Write a program to calculate the sum of all the elements of a list.

(2)

**23.** Write Python code to find the number of words in a string input by the user.

(2)

**24. (i)** Predict the output of the following code.

```
Keys = {1,2,3,4,5}
```

```
print(dict.fromkeys(keys))
```

**(ii)** What is packing of tuples?

(1+1)

**25.** What is the difference between Syntax error and Run-time error?

(2)

## SECTION C

(3x 5 = 15)

26. Draw the truth table and logical circuit of the given Boolean expression:  $F = P.Y + D.T + (A.B)$  (3)
27. Write a Program in python to check whether the given string is Palindrome or not (3)
28. What do you mean by Flowchart? Explain with example.

**OR**

- Draw a flowchart to print the sum of first 10 natural numbers. (3)
29. Explain the following terms:  
(i) Application software  
(ii) EEPROM  
(iii) Bar code reader (3)
30. Write an algorithm to check whether a number is prime number or not. (3)

## SECTION D

(5x 3 = 15)

31. Draw the logic circuit and truth table for the following Boolean expression:  
i.  $(P' + D) . S + R'$   
ii.  $(A . B) . (B + C . D')$  (2+3)
32. (i) Write a Python program to accept a list of all the subject of Class X and display the list of subjects.  
(ii) Write a Python program to calculate area of circle and area of rectangle using concept of functions.

**OR**

**(Option for (ii) part only)**

- What are the effects of cyber bullying and trolling? (3+2)
33. (i) Why is it important to recycle e-waste?  
(ii) What are the techniques used in India for E-waste management? (3+2)

## SECTION E

(2 x 4 = 8)

34. ABC Technologies deals in hardware components required for assembling computer systems in the Nehru Place market. They provide reliable and efficient data storage devices to their customers.  
Four storage devices in which they deal are described below. Name the storage device being described and also list the appropriate category of storage.  
(i) Optical media which use one spiral track; red lasers are used to read and write data on the media surface; makes use of dual-layering technology to increase storage capacity.

(ii) Non-volatile memory chip: contents of the chip cannot be altered; it is often used to store the start-up routines in a computer.

(iii) Optical media which use blue laser technology to read and write data on the media surface.

(iv) Magnetic disc with very large storage capacity; can be used to store vast amounts of data; mostly fixed in computer cases and serves as the main storage device. (1+1+1+1)

35. (i) Write a python program to print the following pattern:

```
A
B B
C C C
D D D D
E E E E E
F F F F F F
G G G G G G G
```

(ii) Write a program to create a dictionary of phone numbers and person's name. Also write the code to search the phone number of a particular person name inputted by user. (2+2)



4. \_\_\_\_\_ Wellness is the ability to understand self and cope with the challenges life can bring. [1]

- a) Spiritual
- b) Social
- c) Emotional
- d) Environmental

5. **Assertion (A):** Yoga paves the path for the spiritual development of an individual. [1]  
**Reason (R):** Yoga for a common person contains the practices of yama, niyama, asana, pranayama, pratyahara, kriya and meditation, which are helpful to keep oneself physically fit, mentally alert and emotionally balanced.

- 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.

6. Zero-degree temperature is an example of scale of measurement. [1]

- a) Interval
- b) Ordinal
- c) Ratio
- d) Nominal

7. Which of the following is not a traditional Indian game? [1]

- a) Bull fight
- b) Kho-Kho
- c) Kabaddi
- d) Kushti

8. Identify the component of wellness: [1]



- a) Emotional wellness
- b) Environmental wellness
- c) Physical wellness
- d) Spiritual wellness

9. Match List - I with List - II and select the correct answer from the code given below: [1]



List-I Symbolism	List-II Olympic Symbols
(a) Sun's rays used	(i) Olympic Motto
(b) Blue, Yellow, Black, Green, Red	(ii) Olympic Flame
(c) Citius, Altius, Fortius	(iii) Olympic Rings
(d) Excellence, Friendship, Respect	(iv) Olympic Values

a) (a) - (iii), (b) - (iv), (c) - (ii), (d) - (i)      b) (a) - (ii), (b) - (iii), (c) - (i), (d) - (iv)

c) (a) - (ii), (b) - (iv), (c) - (iii), (d) - (i)      d) (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv)

10. **Assertion (A):** Technique is an imaginary model of performing any task in cyclic manner. [1]

**Reason (R):** Acquiring style is a long and continuous process in which a player sets an imaginary mechanical model in his/her mind for performing any skill.

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.

11. When did the revival of Olympic games took place? [1]

a) 1892      b) 1899  
c) 1895      d) 1896

12. \_\_\_\_\_ in sport is being able to execute the techniques required at the right time and place, successfully, regularly, and with minimal effort. [1]

a) Technique      b) Strategy  
c) Skill      d) Tactics

13. Physical Education is the sum of changes in an individual caused by experience centring motor activity. Who said this? [1]

a) Prince martin      b) Charls A. Butchar

c) Millions

d) Cassidy

14. Regular physical exercise results in \_\_\_\_\_. [1]

a) improved functional status

b) All of these

c) improved cognitive abilities

d) quality of life

15. \_\_\_\_\_ is the first teacher of yoga. [1]

a) Ramdev

b) Krishan Kumar

c) Yogeshwar

d) Patanjali

16. Which is not an importance of Biomechanics? [1]

a) Improvement of Technique

b) Improvement of sports  
Equipments

c) To understand the structure of  
Movement & effect of forces  
on the Movement

d) To understand Physiology of  
human body

17. What does the term **citius** mean? [1]

a) Slower

b) Faster

c) Higher

d) Stronger

18. The body structure of mesomorphic people is like [1]

a) Large muscles and bones

b) Solid

c) Obese

d) Fatty

### **Section B**

**Attempt any 5 questions**

19. State the uses of Anthropometric measurement. [2]

20. What is a sports facility? [2]

21. What is cardiac output? [2]

22. Define Circumduction. [2]

23. What is the role of a speech therapist for children with special needs? [2]
24. How many types of doping are there? [2]

### Section C

#### Attempt any 5 questions

25. How do test, measurement and evaluation help in future research? Mention three reasons. [3]
26. How does angle of projection help as a factor athletes in games and sports? [3]
27. Give any responsibility of an athlete to control doping? [3]
28. Why are test and measurement important in sports? [3]
29. What are the major muscles involved in jumping & throwing? [3]
30. Write a short note on blood as a part of circulatory system. [3]

### Section D

31. Sun Rise Public School organized a program, in which many people from different career backgrounds related to physical education were present there. [4]



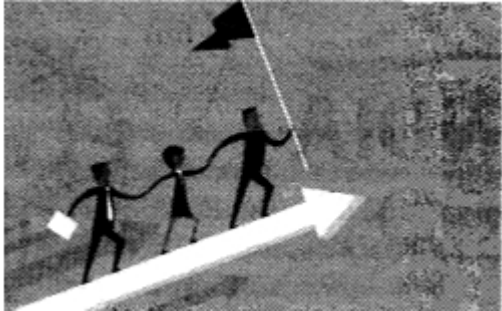
Identify the career.

1. \_\_\_\_\_ is shown in the above picture.
- A. Physical Therapist
  - B. Occupational Therapist
  - C. Speech Therapist
  - D. Clinical Psychologist
2. They help people to improve their \_\_\_\_\_ to perform daily.
- A. skills
  - B. hobbies
  - C. ability
  - D. motivation

3. The person shown in the above picture is also known as \_\_\_\_\_.
- A. Counsellor
  - B. Psychologist
  - C. Social Worker
  - D. Nurse
4. They treat people who have mental, physical, emotional, and \_\_\_\_\_ disabilities.
- A. social
  - B. cognitive
  - C. sensory
  - D. developmental

32. Anand, explains the value of the Olympics in his class.

[4]



Identify the olympic value.

1. \_\_\_\_\_ is shown in the above picture.
- A. Excellence
  - B. Competition
  - C. Teamwork
  - D. Victory
2. The important thing is not winning, but taking \_\_\_\_\_ is important.
- A. risks
  - B. part
  - C. time
  - D. credit
3. This value makes the process and \_\_\_\_\_ the healthy combination of body, will, and mind.
- A. complicates
  - B. enjoys

C. enhances

D. enjoying

4. The Olympics wants every player to strive for their best and excellence and \_\_\_\_\_ people to be the best they can be.

A. discourage

B. challenge

C. motivate

D. pressure

33. Mohit was fit and fine, but his friend was not, so he tells his friend the importance of physical fitness. [4]



Identify the importance of physical fitness.

1. \_\_\_\_\_ is the importance of physical fitness.

A. Mental strength

B. Physical strength

C. Flexibility

D. Endurance

2. A combined routine, including proper exercise and diet, has \_\_\_\_\_ effect on brain function.

A. Negative

B. Neutral

C. Positive

D. Detrimental

3. It also keeps an individual \_\_\_\_\_ strong.

A. Emotionally

B. Physically

C. Socially

D. Mentally

4. It elevates the flow of \_\_\_\_\_ to the brain and enhances the memory.

- A. Nutrients
- B. Blood
- C. Oxygen
- D. Hormones

### **Section E**

#### **Attempt any 3 questions**

- 34. List down any four asanas used for prevention of Hypertension. Explain the procedure and contraindication of any one of them with help of a stick diagram. **[5]**
- 35. Write the importance of Anatomy and Physiology in physical education and sports. **[5]**
- 36. Which principles are required to be followed to make the adapted physical education effective? Explain. **[5]**
- 37. Elucidate five reasons for the importance of physiology. **[5]**