





c) A is true but R is false.

d) A is false but R is true.

12. 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 a standard.

[1]

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.

13. Assertion (A): Line emission spectra help in the study of electronic configuration.

[1]

Reason (R): Each element has a unique line emission spectrum.

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.

14. Assertion (A): In the H atom when electrons jump from 1s to 2s orbital, atom becomes a cation.

[1]

Reason (R): H atom has only one electron.

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.

15. Assertion (A): The size of an anion will be larger than that of the parent atom.

[1]

Reason (R): The removal of an electron from an atom results in the formation of a cation.

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.

16. Assertion (A): In electroplating, the article to be electroplated is always made anode.

[1]

Reason (R): For electroplating reactive metal is coated with other to prevent it from corrosion.

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.

17. Assertion (A): Geometry of SF<sub>4</sub> molecule can be termed as a distorted tetrahedron, a folded square of the see-saw.

[1]

Reason (R): Four fluorine atoms surround or form bonds with sulphur molecule.

a) Both A and R are true and R is the correct explanation of A.

b) A is true but R is false.

c) Both A and R are true but R is not the correct

d) A is false but R is true explanation of A

18. The molecular orbital theory is based on the principle of a linear combination of atomic orbitals. According to this approach when atomic orbitals of the atoms come closer, they undergo constructive interference as well as destructive interference giving molecular orbitals, i.e., two atomic orbitals overlap to form two molecular orbitals, one of which lies at a lower energy level (bonding molecular orbital). Each molecular orbital can hold one or two electrons in accordance with Pauli's exclusion principle and Hund's rule of maximum.

$$\text{Bond order} = \frac{1}{2} [\text{bonding electrons} - \text{antibonding electrons}]$$

Bond order gives the following information:

- I. If bond order is greater than zero, the molecule/ion exists otherwise not.
- II. Higher the bond order, higher is the bond dissociation energy.
- III. Higher the bond order, greater is the bond stability.
- IV. Higher the bond order, shorter is the bond length.

Answer the following question:

- i. Arrange the following negative stabilities of CN, CN<sup>+</sup> and CN<sup>-</sup> in increasing order of  
[Hint: Bond order: CN =  $\frac{9-4}{2} = 2.5$ ; CN<sup>-</sup> =  $\frac{10-4}{2} = 3$ ; CN<sup>+</sup> =  $\frac{8-4}{2} = 2$ ]
- ii. The molecular orbital theory is preferred over valence bond theory. Why?
- iii. O<sub>2</sub><sup>2-</sup> will have bond order \_\_\_\_\_ than O<sub>2</sub> and bond order \_\_\_\_\_ to H<sub>2</sub>.
- iv. In which set of molecules all the species are paramagnetic?
  - a. B<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>
  - b. B<sub>2</sub>, O<sub>2</sub>, NO
  - c. B<sub>2</sub>, F<sub>2</sub>, O<sub>2</sub>
  - d. B<sub>2</sub>, O<sub>2</sub>, Li<sub>2</sub>
- v. Bonding molecular orbital is lowered by a greater amount of energy than the amount by which antibonding molecular orbital is raised. (True/False)

19. What are the two different system of measurement? [1]
20. Suppose a length had been reported to be 31.24 cm. What is the minimum uncertainty implied in this measurement? [1]
21. How many molecules are present in 0.5 moles of CO<sub>2</sub> which is produced by combustion of methane? [1]
22. Which orbital is non - directional? [1]
23. Explain why the uncertainty principle is significant only for the motion of subatomic particles but is negligible for the macroscopic objects? [1]
24. What is nodal surface or nodes? [1]
25. What is the electronic configuration when elements are classified group wise? [1]
26. Define a neutral oxide. [1]
27. How does metallic character change in a group? [1]
28. What type of hybridisation is involved in SF<sub>6</sub>? [1]
29. HCl is a covalent compound but it ionises in solution. Explain. [1]
30. What type of bond exists in multiple bonds (double/triple)? [1]
31. Define Oxidation and Reduction in terms of oxidation number. [1]
32. What is the role of a salt bridge in an electro chemical cell? [1]
33. Can we store copper sulphate in an iron vessel? [1]

## Section B

34. The density of 3 M solution of NaCl is 1.25 g mL<sup>-1</sup>. Calculate the molality of the solution. [3]
35. A 25-watt bulb emits monochromatic yellow light of wavelength 0.57 μm. Calculate the rate of emission of quanta per second. [3]
36. Write characteristics of all seven periods of the periodic table. [3]
37.
  - i. How bond energy varies from N<sup>-</sup> to N<sup>+</sup> and why? [3]
  - ii. On the basis of molecular orbital theory, what is a similarity theory

a.  $F_2$  and  $N_2^-$

b.  $CO$ ,  $N_2$ ,  $NO^+$ ?

38. Although geometries of  $NH_3$  and  $H_2O$  molecules are distorted tetrahedral, the bond angle in water is less than that of ammonia. Discuss. [3]
39. In the reactions given below, identify the species undergoing oxidation and reduction. [3]
- $H_2S(g) + Cl_2(g) \rightarrow 2HCl(g) + S(s)$
  - $3Fe_3O_4(s) + 8Al(s) \rightarrow 9Fe(s) + 4Al_2O_3(s)$
  - $2Na(s) + H_2(g) \rightarrow 2NaH(s)$
40. State and explain the following: [5]
- Aufbau principle
  - Pauli exclusion principle
  - Hund's rule of maximum multiplicity.
41. Discuss the significance/ applications of dipole moment. Represent diagrammatically the bond moments and the resultant dipole moment in  $CO_2$ ,  $NF_3$ , and  $CHCl_3$ . [5]
42. Permanganate(VII) ion,  $MnO_4^-$  in basic solution, oxidises iodide ion,  $I^-$  to produce molecular iodine ( $I_2$ ) and manganese (IV) oxide ( $MnO_2$ ). Write a balanced ionic equation to represent this redox reaction [5]

**St. PBN PUBLIC SCHOOL, GURUGRAM**  
**HALF YEARLY EXAMINATION**  
**CLASS XI**  
**COMPUTER SCIENCE**  
**(SUBJECT CODE-083)**  
**SAMPLE PAPER**

**Time: 3 Hours**

**M.M:70**

**INSTRUCTIONS:**

- The question paper is divided into 3 sections – A, B and C
- Section A, consists of 15 questions (1-15). Each question carries 1 mark.
- Section B, consists of 20 questions
  - Question No. (16-25) carries 1 marks.
  - Question No. (26-30) carries 2 marks.
  - Question No. (31-35) carries 3 marks.
- Section C, consists of 5 questions (36-40). Each question carries 4 marks
- All questions are mandatory.

**SECTION- A**

**Choose the correct option and write in the answer sheet**

**(1 x 15 = 15)**

**1. ROM is a**

- (a) Volatile memory
- (b) Non- Volatile memory
- (c) Both a and b
- (d) None of these

**2. Convert  $(95)_{10}$  into binary number system.**

- (a)  $(1111101)_2$
- (b)  $(1111011)_2$
- (c)  $(1011111)_2$
- (d)  $(1010101)_2$

**3. Convert  $(A2DE)_{16} = ( )_8$**

- (a)  $(121336)_8$
- (b)  $(135336)_8$
- (c)  $(127336)_8$
- (d)  $(1215496)_8$

**4. Which of the following falls under utilities?**

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

5. Storage of 1 KB means the following number of bytes:

- (a) 1000
- (b) 964
- (c) 1024
- (d) Python Command Line

6. There are no standard rules to write .....

- (a) Pseudo-code
- (b) Flow Chart
- (c) Algorithms
- (d) Circuit diagram

7. Which of the following is not in Python Character Set?

- a) Letters : A-Z or a – z
- b) Digits : 0 – 9
- c) Whitespaces : blank space, tab etc
- d) Images : Vector

8. Which of the following is not the mode of interacting with python?

- (a) interactive mode
- (b) script mode
- (c) hybrid mode
- (d) none of these

9. What will be the data type of the following variable?

A= '101'

- (a) float
- (b) string
- (c) int
- (d) none of above

10. Which of the following is not correct about python?

- a) Python is an open source language.
- b) Python is based on ABC language.
- c) Python is developed by Guido Van Rossum
- d) None of the above

11. Which of the following symbol is used to write comment?

- a) ?
- b) //
- c) #
- d) \*\*

12. Each statement in python is terminated by \_\_\_\_\_

- a) Semicolon(;
- b) Colon(:)
- c) Comma(,)
- d) None of the above

13. \_\_\_\_\_ spaces should be left for indentation.

- a) 5
- b) 4
- c) 6
- d) 2

14. return statement is mandatory in function definition.(T/F)

- a) True
- b) False

15. Which keyword is used to define a function in python?

- a) def
- b) define
- c) new
- d) none of these

## SECTION B

Answer the following questions very briefly:

(1x 10 = 10)

16. Which command is used in python to retrieve the address of a variable?

17. What will be the output of the following snippet?

```
>>> D=200
>>> K=D
>>> D is K
```

18. while (0) ,how many times a loop run ?

19. Write the output of the following :

```
if 1 + 3 == 7:
    print("Hello")
else:
    print("Know Program")
```

20. How many times the “Hello” will be printed when the following python code executed?

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

21. Convert  $(1101001)_2$  to  $( )_{10}$

22. Which statement is used to skip a particular step of a loop?

23. Write the python statement to assign a value 20 to a variable x.

24. Draw a truth table of OR Gate.

25. Name the universal gates.

**Answer the following questions in brief**

**(2x 5 = 10)**

26. What is the difference between a RAM and ROM?

27. (i) Write an algorithm to add two numbers.

(ii) Draw the circuit diagram of :  $(A + B)(C + D)$

28. What are operators? Give example of unary and binary operators.

29. What do you mean by Type Conversion?

30. Write a program to find whether the given number is even or odd.

**Answer the following questions in detail:**

**(3x 5 = 15)**

31. Explain the components of computational thinking?

32. Write a pseudo-code that reads two numbers and divide one by another and display the quotient.

33. What do you mean by Pseudo- code? Explain with example.

34. Explain the following terms:

- (i) Light-Pen
- (ii) Abstraction
- (iii) Decision making statements

35. Write a python program to print the factorial of a number entered by user.

### SECTION C

**Competency based questions**

**(4 x 5 = 20)**

36. Identify the type of software:

- (i) The software acts as an interface between a user and the hardware.
- (ii) It converts the program written in HLL into a machine language by converting and executing it line by line.
- (iii) The software commonly used to prepare presentations
- (iv) The software used to compress the file into a WinRaR file

37. Verify the following using truth table :

- (i)  $a.(a+b) = a$
- (ii)  $X.(Y + Z) = X.Y + X.Z$

38. (i) WAP to print fibonacci series.

(ii) WAP to display the numbers between 1 – 100 which are divisible by 5

39. (i) WAP to calculate and display the selling price of a item. Cost price and profit is to be accepted by user.

(ii) Evaluate expression :  $12 * 3 \% 5 + 2 * 6 // 4$  and  $12 + (3 ** 4 - 6) // 2$

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

$1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots + \frac{1}{n}$

(ii) Write a program to display the months of year on the basis of a number entered by user.

**St. PBN Public School, Gurugram**  
**Half Yearly Examination**  
**Class - XI**  
**Subject – Mathematics**  
**Sample Paper**

Time 3 hours

M.M:80

**General Instructions:**

- Section A consists of 20 questions of 1 mark each.
- Section B consists of 6 questions of 2 marks each.
- Section C consists of 6 questions of 4 marks each.
- Section D consists of 4 questions of 6 marks each.

**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) $\pi$             |

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. Represent the complex number  $z = 1 + i\sqrt{3}$  in the polar form.
25. Express the following in the form of  $a + ib$ :

$$\frac{5 + \sqrt{2}i}{1 - \sqrt{2}i}$$

26. Find the value of x for which the points  $(x, -1)$ ,  $(2, 1)$  and  $(4, 5)$  are collinear.

### Section C

27. 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?

28. Find all pairs of consecutive even positive integers, both of which are larger than 5, such that their sum is less than 23.
29. Find the conjugate of  $\frac{(3-2i)(2+3i)}{(1+2i)(2-i)}$ .
30. If  $x+iy = \frac{a+ib}{a-ib}$ , prove that  $x^2 + y^2 = 1$ .
31. Find the value of  $\tan \frac{\pi}{8}$ .
32. Convert the complex number  $\frac{-16}{1+i\sqrt{3}}$  into polar form

**Section D**

33. 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
- (i) The number of people who read atleast one of the newspapers.
- (ii) The number of people who read exactly one newspaper.
34. Let  $z_1 = 2 - i, z_2 = -2 + i$ . Find
- (i)  $Re\left(\frac{z_1 z_2}{\bar{z}_1}\right)$ ,                      (ii)  $Im\left(\frac{1}{z_1 \bar{z}_1}\right)$
35. 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.
36. Find the modulus and argument of the complex numbers:
- (i)  $\frac{1+i}{1-i}$ ,                      (ii)  $\frac{1}{1+i}$

.....

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**ST. PBN PUBLIC SCHOOL, GURUGRAM**  
**HALF YEARLY EXAMINATION**  
**SAMPL PAPER**  
**CLASS-XI**  
**PHYSICS**

**TIME: 3 HRS.**

**M.M.: 70**

**General Instructions:**

1. The question paper comprises two sections – A and B. Attempt all the sections.
2. All questions are compulsory.
3. Internal choice is given in each section.
4. All questions (Q.no. 1 to 32) in Section A are one-mark questions comprising MCQ, VSA type and assertion-reason type, case based type questions. They are to be answered in one word or in one sentence.
5. All questions (Q.no. 33 to 42 ) in Section B are three marks and five-marks, short –answer and long-answer type questions.
6. This question paper consists of a total of 42 questions.

**SECTION-A**

1. The dimensions of kinetic energy is same as that of
  - (a) force
  - (b) pressure
  - (c) work
  - (d) momentum
2. In SI system the fundamental units are
  - (a) meter, kilogram, second, ampere, Kelvin, mole and candela
  - (b) meter, kilogram, second, coulomb, Kelvin, mole and candela
  - (c) meter, Newton, second, ampere, Kelvin, mole and candela
  - (d) meter, kilogram, second, ampere, Kelvin, mole and lux
3. \_\_\_\_\_ is the motion along a curved path.
  - a) plane motion
  - b) rectilinear motion
  - c) curvilinear Motion
  - d) none of the mentioned
4. The unit of linear acceleration is
  - a) kg-m
  - b) m/s
  - c)  $m/s^2$
  - d)  $rad/s^2$
5. Two objects of masses  $m_1$  and  $m_2$  fall from the heights  $h_1$  and  $h_2$  respectively. The ratio of the magnitude of their momenta when they hit the ground is

$$(a) \sqrt{\frac{h_1}{h_2}}$$

$$(b) \sqrt{\frac{m_1 h_1}{m_2 h_2}}$$

$$(c) \frac{m_1}{m_2} \sqrt{\frac{h_1}{h_2}}$$

$$(d) \frac{m_1}{m_2}$$

6. The force required to produce an acceleration of  $2 \text{ m/s}^2$  on a mass of  $2 \text{ kg}$  is
- (a)  $4 \text{ N}$
  - (b)  $10 \text{ N}$
  - (c)  $22 \text{ N}$
  - (d)  $18 \text{ N}$
7. A machine gun fires a bullet of mass  $40 \text{ g}$  with a velocity of  $1200 \text{ ms}^{-1}$ . The man holding it can exert a maximum force of  $144 \text{ N}$  on the gun. How many bullets can he fire per second at the most?
- (a) one
  - (b) four
  - (c) two
  - (d) three
8. A body of mass  $10 \text{ kg}$  is travelling with uniform speed of  $5 \text{ m/s}$ . Its kinetic energy is
- (a)  $25 \text{ J}$
  - (b)  $125 \text{ J}$
  - (c)  $1250 \text{ J}$
  - (d)  $1000 \text{ J}$
9. When the linear momentum of a particle is increased by  $1\%$  its kinetic energy increases by  $x\%$ . When the kinetic energy of the particle is increased by  $300\%$ , its linear momentum increases by  $y\%$ . The ratio of  $y$  to  $x$  is
- (a)  $300$
  - (b)  $150$
  - (c)  $100$
  - (d)  $50$
10. An electric heater of rating  $1000 \text{ W}$  is used for  $5 \text{ hrs}$  per day for  $20 \text{ days}$ . The electrical energy utilised is
- (a)  $150 \text{ kWh}$
  - (b)  $200 \text{ kWh}$
  - (c)  $100 \text{ kWh}$
  - (d)  $300 \text{ kWh}$

*Directions :* Each of these questions contain two statements, Assertion and Reason. Each of these questions also has four alternative choices, only one of which is the correct answer. You have to select one of the codes (a), (b), (c) and (d) given below.

- (a) Assertion is correct, reason is correct; reason is a correct explanation for assertion.
- (b) Assertion is correct, reason is correct; reason is not a correct explanation for assertion

- (c) Assertion is correct, reason is incorrect
- (d) Assertion is incorrect, reason is correct.

11. Assertion : A man rowing a boat upstream is at rest with respect to the bank. He is doing no external work.

Reason : Work done by constant force,  $W = F s \cos\theta$ .

12. Assertion : The rate of change of total momentum of a many particle system is proportional to the sum of the internal forces of the system.

Reason : Internal forces can change the kinetic energy but not the momentum of the system.

13. Assertion : Number of significant figures in 0.005 is one and that in 0.500 is three

Reason : This is because zeros are not significant.

14. Assertion : A particle starting from rest and moving with uniform acceleration travels' a length of  $x$  and  $3x$  in first two and next two-seconds.

Reason : Displacement is directly proportional to velocity.

15. Assertion : A body is momentarily at rest when it reverses the direction.

Reason : A body cannot have acceleration if its velocity is zero at a given instant of time.

16. Assertion : Impulse of force and momentum are same physical quantities.

Reason : Both quantities have same unit.

17. Assertion: Same force applied for the same time causes the same change in momentum for different bodies

Reason: The total momentum of an isolated system of interacting bodies remains conserved.

18. Write the dimensions of torque .

19. When the electric current is switched off, why the blades of a fan keep on moving for some time?

20. Rocket works on which principle of conservation?

21. Mention the conditions for the maximum and minimum pull of a lift on a supporting cable.

22. State the number of significant figures in the following:

(a)  $0.007 \text{ m}^2$  (b)  $2.64 \times 10^4 \text{ kg}$

23. The surface area of a solid cylinder of radius 2.0 cm and height 10.0 cm is equal to .....(mm)<sup>2</sup>.

24. The length, breadth and thickness of a rectangular sheet of metal are 4.234 m, 1.005 m and 2.01 cm respectively. Give the area and volume of the sheet to correct significant figures.

25. From a flying airplane, an object should be dropped in advance to hit the target. Why?

26. Is the value of  $g$  positive or negative?

27. Can the relative velocity of two bodies be greater than the absolute velocity of either?

28. A person sitting in a moving bus throws a stone vertically upward. How does the ball appear to move to an observer inside the bus? What for the outside observer?

29. What is the work done by the tension in the string of simple pendulum?

30. When an arrow is shot, wherefrom the arrow will acquire its K.E.?

31. In a tug of war, one team is slowly giving way to the other. What work is being done and by whom?
32. Two protons are brought closer. What is the effect on the potential energy of the system?
33. Out of a pair of identical springs of force constants,  $240\text{Nm}^{-1}$  one is compressed by 10 cm and the other is stretched by 10 cm. What is the difference in the potential energies stored in the two springs?

### SECTION – B

34. Check the correctness of physical equation  $s = ut + \frac{1}{2}at^2$ . In the equation,  $s$  is the displacement,  $u$  is the initial velocity,  $v$  is the final velocity,  $a$  is the acceleration and  $t$  is the time in which change occurs.
35. Two trains A and B of length 400 m each are moving on two parallel tracks with a uniform speed of  $71\text{ km h}^{-1}$  in the same direction, with A ahead of B. The driver of B decides to overtake A and accelerates by  $1\text{ ms}^{-1}$ . If after 50 s, the guard of B just brushes past the driver of A, what was the original distance between them?
36. Read each statement below carefully and state with reasons and examples, if it is true or false; A particle in one-dimensional motion
- (a) with zero speed at an instant may have non-zero acceleration at that instant.
  - (b) with, zero speed may have non-zero velocity.
  - (c) with constant speed must have zero acceleration
37. Point out the correct alternative:
- (a) When a conservative force does positive work on a body, the potential energy of the body increases/decreases/remains unaltered.
  - (b) Work done by a body against friction always results in a loss of its kinetic/potential energy.
  - (c) The rate of change of total momentum of a many-particle system is proportional to the external force/sum of the internal forces of the system.
38. State if each of the following statements is true or false. Give reasons for your answer.
- (a) In an elastic collision of two bodies, the momentum and energy of each body is conserved.
  - (b) Total energy of a system is always conserved, no matter what internal and external forces on the body are present.
  - (c) Work done in the motion of a body over a closed loop is zero for every force in nature.
39. On a two-lane road, car A is travelling with a speed of  $36\text{ km h}^{-1}$ . Two cars B and C approach car A in opposite directions with a speed of  $54\text{ km h}^{-1}$  each. At a certain instant, when the distance AB is equal to AC, both being 1 km, B decides to overtake A before C does. What minimum acceleration of car B is required to avoid an accident?

40. A body of mass 0.40 kg moving initially with a constant speed of  $10 \text{ ms}^{-1}$  to the north is subject to a constant force of 8.0 N directed towards the south for 30 s. Take the instant the force is applied to be  $t = 0$ , the position of the body at that time to be  $x = 0$ , and predict its position at  $t = -5 \text{ s}$ , 25 s, 100 s.

41. (i) A bob of mass 0.1 kg hung from the ceiling of a room by a string 2 m long is set into oscillation.

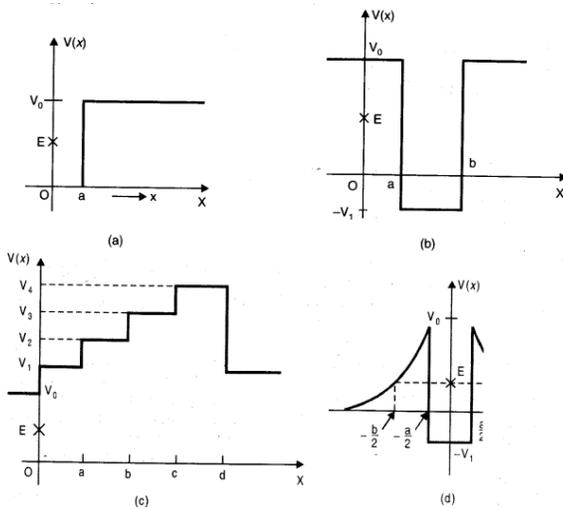
The speed of the bob at its mean position is  $1 \text{ ms}^{-1}$ . What is the trajectory of the bob if the string is cut when the bob is (a) at one of its extreme positions, (b) at o its mean position ?

(ii) A man of mass 70 kg, stands on a weighing machine in a lift, which is moving

(a) upwards with a uniform speed of  $10 \text{ ms}^{-1}$ .

(b) downwards with a uniform acceleration of  $5 \text{ ms}^{-2}$ .

42. Given figures are examples of some potential energy functions in one dimension. The total energy of the particle is indicated by a cross on the ordinate axis. In each case, specify the regions, if any, in which the particle cannot be found for the given energy. Also, indicate the minimum total energy the particle must have in each case. Think of some physical contexts for which these potential energy shapes are relevant.



**ST. PBN PUBLIC SCHOOL, GURGAON**  
**CLASS XI**  
**SAMPLE PAPER**  
**SUBJECT- ENGLISH**

**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. Internet is built around the idea of openness. It allows people to connect and exchange information freely if the information or service is not illegal. Much of this is because of the idea of net neutrality.
2. When the Internet started to take off in the 1980s and 1990s, there were no specific rules which stated that Internet Service Providers (ISPs) should follow the same principle. But mostly because telecom operators were also ISPs, they adhered to the same principle. This principle is known as net neutrality. An ISP does not control the traffic that passes its servers. When a web user connects to a website or web service, he or she gets the same speed. Data rate for YouTube Videos and Facebook photos is theoretically the same. Users can access any legal website or web service without any interference from an ISP.
3. Net neutrality has shaped the Internet in two fundamental ways. One, web users are free to connect to whatever website or service they want. ISPs do not bother with what kind of content is flowing through their servers. This has allowed the Internet to grow into a truly global network and has allowed people to freely express themselves. But more importantly, net neutrality has enabled a level playing field on the Internet. To start a website, you don't need a lot of money or connections. Just host your website and you are ready to go. If your service is good, it will find favor with web users. This has led to creation of Google, Facebook, Twitter and countless other services.
4. If there is no net neutrality, ISPs will have the power (and inclination) to shape the Internet traffic, so that they can derive extra benefit from it. For instance, several ISPs believe that they should be allowed to charge companies for services like YouTube and Netflix because these services consume more bandwidth compared to a normal website. Basically, these ISPs want a share in the money that YouTube or Netflix make.

5. Without net neutrality, the internet as we know will not exist. Instead of free access, there could be 'package plans' for consumers. For instance, if you pay Rs. 500, you will only be able to access websites based in India. To access international websites, you may have to pay more. Or maybe there can be different connection speed for different types of content, depending on how much you are paying for the service and what 'add-on-package' you have bought.

6. Lack of net neutrality will also spell doom for innovation on the web. It is possible that ISPs will charge web companies to enable faster access to their websites. Those who don't pay may see that their websites will open slowly. This means that bigger companies like Google will be able to pay more to make access to YouTube or Google + faster for web users, but a start-up that wants to create a different and better video hosting site may not be able to do that.

7. Legally, the concept of net neutrality doesn't exist in India. Sunil Abraham, the Executive Director of the Centre for Internet and Society in Bangalore, says that Telecom Regulatory Authority of India (TRAI), which regulates the telecom industry, has tried to come up with some rules regarding net neutrality several times. For instance, it invited comments on the concept of net neutrality from industry bodies and stakeholders in 2006. But no formal rules have been formed to uphold and enforce net neutrality.

8. However, despite lack of formal rules, ISPs in India mostly adhere to the principle of net neutrality. There have been some incidents where Indian ISPs have ignored net neutrality, but these are few and far between.

Questions:

(i) Which of the following statements is true about ISPs?

1. They run according to specific rules and regulations
2. They are not responsible for controlling the jamming of the Internet
3. They interfere in the usage and accessibility of legal websites
4. They are responsible for monitoring the kind of content flowing through the Internet

(ii) Without net neutrality, how will one be able to access the Internet?

1. There will be no access to the Internet
2. One will have to travel miles to use the web
3. By opting for 'package plans' by ISPs to access the web
4. None of the above

(iii) What problem will the start-ups face in case there is lack of net neutrality?

1. They will have to pay more to the ISPs
2. They will face funding problems

3. They won't be able to prototype the idea of better and innovative websites
4. All of the above

(iv) What does the passage and the writer talk about?

1. The advantage of Internet to mankind
2. Importance of net neutrality and its enforcement as law
3. Evolution of start-ups
4. All of the above

(v) What are the "package plans" the author talks about in the passage?

1. Travel package
2. Insurance package
3. Payment based Internet packages
4. All of the above

(vi) The concept of net neutrality

1. legally doesn't exist in India
2. Exists with formal rules from 2001
3. Is opposed in India
4. All of the above

(vii) fundamental means in the (para 2)

1. Basic
2. Base
3. Superficial
4. Secondary

(viii) an interested party or individual means in the (para 7)

1. Non participant
2. Stakeholder
3. Spectator
4. Observer

(ix) To start a website you need.....

1. Need money
2. Host website
3. Connection
4. All of the above

(x) What is the full form of ISP?

1. Internet Security Protocol
2. Internet Survey Period
3. Internet Service Providers

#### 4. Integrated Service Provider

(xi) Antonym of ill – fated is \_\_\_\_\_.

1. hopeful
2. blessed
3. doom
4. all of the above

#### **Q2. Read the passage carefully and tick the correct option. (any 8) (1x8=8marks)**

##### **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 the 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, choosing the most appropriate option:**

- a. Students' development is hindered by \_\_\_\_\_.
  - i. limiting education to academic boundaries.
  - ii. getting out to the field.
  - iii. being creative and unique.
  - iv. gaining practical knowledge.
  
- b. 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.
  
- c. Co- Curricular activities that take place outside the classroom do not help in \_\_\_\_\_.
  - i. teamwork and co-ordination.
  - ii. mental and social growth.
  - iii. intellectual development.
  - iv. character building.
  
- d. Guest speakers talk about \_\_\_\_\_.
  - i. all round development.
  - ii. their real life experiences.
  - iii. what is in text books.
  - iv. gaining exposure.
  
- e. Classroom teaching provides \_\_\_\_\_.
  - i. practical exposure
  - ii. opportunities to implement what is learnt in classroom
  - iii. chance to learn soft skills

iv. the foundation

f. Life beyond academics facilitates \_\_\_\_\_.

- i. organizational functions
- ii. creativity
- iii. professional fields
- iv. industrial visits

g. What is the synonym of 'fabricated'? (Para 1)

- i. Hoax
- ii. Real
- iii. Genuine
- iv. None of the above

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

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

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

- i. Real
- ii. Practical
- iii. Hands on
- iv. Pragmatic

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

1. Flexibility and mobility are essential not only to reduce the risk of injuries but to generally feel better. Living a nine to five desk life can be demanding on health and wellness. Here is how you can keep the most common problems at bay.

2. Even if you are not exercising you need to make sure that you maintain correct posture and sit at your desk in the right way. It is important that your chair is placed correctly and your legs are not left hanging. Proper alignment ensures that your neck and back are not strained. Exercises and abdominal crunches two to three times a week can strengthen the core. It will help take the pressure off your back and will make it easier to maintain good posture. Chairs with a back that support your upper back are preferable for those who work long hours in front of screens.

3. Constant typing, writing reports, and answering e-mails can exert your wrists leading to long-term damage. The frequency of your use and how you position your wrists at

your keyboard can be a reason. The telltale signs of exertion would be a tingling sensation or numbness. One should not ignore initial signs. Make sure that you rest your wrist at regular intervals. To relieve tension quickly fold your hands in a NAMASTE in front of your chest with elbows moving out and lower your hands till you feel a good stretch in your wrists. Also rotating your fists inside and outside provides much relief to strained wrists.

4. Since those who work on desks spend a lot of time looking at a computer screen, they are at a risk of straining their eyes. This may also lead to dry eyes and fatigue. Poor eyesight is the result of continued and improper exposure to screens. Keeping the computer screen at an optimal distance helps a lot in minimizing strain to eyes. The screen shouldn't be too close or too far. To ease eye strain use good lighting and make it a point to look at a distance away from your screen every twenty to thirty minutes.

**(a) On the basis of your reading of the above passage make notes on it using headings and subheadings. Use recognizable abbreviations and a format you consider suitable. Also, supply a title to it. (5M)**

**(b) Write a summary of the passage in not more than 80 words using the notes made. (3M)**

**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 debate supporting the motion that life in the country (a village) is preferable to life in the city. Use your information to develop Manish's 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 120 - 150 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.  
a) The poet and the rain respectively  
b) The rain and the poet respectively  
c) A poem and the poet respectively  
d) A student and a teacher respectively
  
2. The expression And who art thou expresses \_\_\_\_\_.  
a) hatred  
b) indifference  
c) curiosity  
d) admiration

3. Who asks the question from rain?

- a) Rain
- b) Poet
- c) A friend
- d) None of the above

**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?

- a) Poet
- b) Poet's mother
- c) Dolly
- d) Betty

2. The expression "Its silence silences" is.....

- a) paradox
- b) simile
- c) repetition
- d) alliteration

3. "This circumstance" refers to.....

- a) the death of Dolly and Betty
- b) the beach holiday
- c) the pain and void due to mother's death
- d) the loss of time

**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?

- a) Grandmother's
- b) Author's
- c) Teacher's
- d) None of the above

2. Who are 'we' in the second line?

- a) Author and teacher
- b) Author and grandmother

- c) Author and his parents
- d) None of the above

3. Why author's grandmother didn't accompany him to school now?

- a) He was angry with grandmother
- b) Grandmother was angry with him
- c) He started going by bus
- d) He didn't want to go with her

**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. What more problems about the pumps worried the narrator?
- 2. How did Sue make her father laugh when the situation was almost hopeless?
- 3. Three reasons why the author's grandmother was disturbed when he started going to the city school.

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

1. Why did the narrator of the story want to forget the address?
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)**

Describe the changing relationship between the author and his grandmother. Did their feelings for each other change?

**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**

Compare and contrast the characteristic quality of uncle Khosrove and cousin Mourad.

**ST. PBN PUBLIC SCHOOL,GURUGRAM**

**HALF YEARLY EXAMINATION**

**SAMPLE PAPER**

**CLASS-XI**

**BIOLGY**

**TIME: 3 HRS.**

**M.M.: 70**

**General Instructions:**

1. The question paper comprises two sections – A and B. Attempt all the sections.
2. All questions are compulsory.
3. Internal choice is given in each section.
4. All questions (Q.no. 1 to 37) in Section A are one-mark questions comprising MCQ, VSA type and assertion-reason type, case based type questions. They are to be answered in one word or in one sentence.
5. All questions (Q.no. 38 to 46 ) in Section B are three marks and five-marks, short – answer and long-answer type questions.
6. This question paper consists of a total of 46 questions.

**SECTION A**

Tick the most appropriate answer.

1. Plasmolysis occurs due to

- (a) Absorption (b) Exosmosis  
(c) Osmosis (d) Endosmosis

2. Species found in different geographical locations are called

- (a) Sympatric species (b) Allopatric species  
(c) Sibling species (d) Morphospecies

3. Which is the common characteristic of multicellular fungi, filamentous algae and protonema of mosses?

- (a) Mode of nutrition (b) Diplontic life cycle  
(c) Multiplication by fragmentation (d) Members of Plant Kingdom

4. The canal system in sponges develops due to

- (a) Porous walls (b) Gastrovascular system  
(c) Reproduction (d) Folding of inner walls

5.  $\beta$ -oxidation occurs in

- (a) Nucleus (b) Cytoplasm  
(c) Mitochondria (d) Chloroplast

6. The \_\_\_\_\_ state implies the exit of cells from the cell cycle  
(a) G1 (b) G2 (c) G0 (d) S
7. The significance of the day length in plants was first shown in:  
(a) Barley (b) Lettuce (c) Tobacco (d) Tomato
8. Binomial nomenclature was given by  
(a) Linnaeus (b) De Vries (c) John Ray (d) Huxley
9. \_\_\_\_\_ is a plant hormone generally present in the gaseous state  
(a) Ethylene (b) Ethane (c) Argon (d) None
10. Which is not an example of transmembrane transport between different subcellular compartments?  
(a) Transport from the stroma into thylakoid space  
(b) Transport from the cytoplasm into the lumen of the endoplasmic reticulum  
(c) Transport from the endoplasmic reticulum into the Golgi complex  
(d) Transport from mitochondrial intermembrane space into the mitochondrial matrix

### **ASSERTION-REASONS**

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

11. **Assertion** : Every chromosome, during metaphase has two chromatids.

**Reason** : Synthesis of DNA takes place in the S-phase of interphase.

12. **Assertion**: Deshelled eggs swell up in hypotonic solution.

**Reason**: An egg is rich in proteins

13. **Assertion**: Binomial nomenclature is system of providing name with two.

**Reason**: Each name consists 1st of a specific name and 2nd of generic name.

14. **Assertion:** Rhodophyta is red in color due to presence of r-phycoerythrin  
**Reason:** Phycoerythrin absorbs blue green light & reflects red light
15. **Assertion:** Aschelminthes have special cells called flame cells  
**Reason:** Flame cells help in respiration
16. **Assertion:** By suppressing the activity of lateral buds, auxins promote apical dominance.  
**Reason:** In moriculture, periodic pruning of shoot tips is done to make mulberry plants bushy.
17. **Assertion:** The body of hemichordates is divisible into proboscis, collar and trunk.  
**Reason:** Proboscis gland helps in digestion.

### **CASE BASED QUESTIONS**

Read the passage given below and answer the following questions:(18-22)

Classification is not a single step process but involves a hierarchy of steps in which each step represents a rank or category. Each category, a unit of classification represents a taxon. Taxonomic studies of all known groups have led to the development of certain common categories.

18. What is the correct sequence of category in taxonomic hierarchy?
19. The family that includes lion, tiger & leopard they belong to which genus?
20. Which order that includes plant family- convolvulaceae & solanaceae belongs to which class ?
21. Which category has highest number of common characters- species, genus, kingdom ?
22. Primates are placed in which class ?

**Answer in one word or a sentence(23-37).**

23. What is a taxon?
24. What are imperfect fungi?
25. Name the blood filled cavity in arthropods.
26. How are co-factors different from prosthetic groups?
27. List three physiological processes in plants that are affected by light.

28. In which phylum do the adults exhibit radial symmetry and larva exhibit bilateral symmetry?
29. Name one monosaccharide sugar that is found in the blood plasma of human beings.
30. Write scientific name of cat & tiger.
31. Why do marine algae have no mechanical tissue?
32. Why are red algae able to survive in the deep-sea?
33. Define the term open-type circulatory system.
34. Which cell organelle act as “segregation apparatus”?
35. During which part of interphase active synthesis of RNA and proteins take place.
36. Name the polymer which forms exoskeleton of insects.
37. What will happen if short-day plants are exposed in day lengths in excess of their certain critical photoperiod?

**Answer following questions (38-43) in 50 words.**

38. Explain two defining characteristics of living organisms.
39. What is diatomaceous earth? Why are diatoms referred to as ‘pearls of the ocean’?
40. What do you mean by double fertilization and triple fusion?
41. Differentiate between the male and female gametophytes of pteridophytes and gymnosperms.
42. The living state is a non-equilibrium steady-state to be able to perform work – Comment.
43. How much time will two E. Coli cells take to become 32 cells if the average duplication time of E. coli is 20 minutes?

**Answer the following questions (44-46) in 70 words.**

44. i. State differences between the events of meiosis and mitosis.  
ii. Where are plant hormones formed? How are the hormones passed to the specific site of activity?
45. In catalyzed reactions, the formation of the enzyme-substrate complex is the first step. Explain the other steps until the formation of the product.

- 46.i) Name the classes of vertebrates with two, three and four-chambered hearts.
- ii) In which phylum do the adults exhibit radial symmetry and larva exhibit bilateral symmetry?

**ST. PBN PUBLIC SCHOOL  
CLASS-XI  
HALF YEARLY EXAM  
SAMPLE PAPER  
PHYSICAL EDUCATION**

**Time:-3HOURS.**

**MM: 70**

**GENERAL INSTRUCTIONS:-**

- **All the questions are compulsory.**
- **Read the questions carefully.**

- Q1. Physical education career option is: 1
- a) Sports Photography.                      b) Sports Administration.  
c) Sports Broadcasting.                      d) All of the above.
- Q2. The headquarters of IOC is situated in: 1
- a) Germany                                      b) Switzerland  
c) France                                         d) Sweden
- Q3. Kapalbhati improve the functioning of the: 1
- a) Lungs                                         b) Knees  
c) Joints                                         d) Liver
- Q4. A mental retarded child does not: 1
- a) Learn easily                                 b) Express his feelings  
c) Respond Quickly                             d) All of these
- Q5. Traditional games help promote: 1
- a) Emotional wellness                         b) Passive of flexibility  
c) Social wellness                               d) All of these
- Q6. Which of the following aspects is not an important aspect of a person's personality? 1
- a) Cognitive                                     b) Emotional  
c) Functional                                     d) Creative



c) Paralympics

d) All the above

**Answer the following questions very briefly.**

- Q15. What does khumbhaka mean? 1
- Q16. In which year, the Paralympic word was used officially? 1
- Q17. Which muscle fiber contracts at slow speed? 1
- Q18. Where will the 2028 Olympic Games be held? 1
- Q19. Wimbledon Cup is related to which game? 1
- Q20. Who said, "Checking the impulses of mind is Yoga"? 1
- Q21. In which year, Special Olympics India was founded? 1
- Q22. In which unit the strength of a body is measured? 1

**Fill in the blanks:-**

- Q23. Dynamic Strength can be called \_\_\_\_\_ strength. 1
- Q24. The first Paralympic Games were held at \_\_\_\_\_ in 1960. 1
- Q25. In the practice of \_\_\_\_\_ the body sleeps but the mind remains awake. 1
- Q26. Coaching career is a \_\_\_\_\_ career in the field of physical education. 1
- Q27. Fortius means \_\_\_\_\_. 1
- Q28. \_\_\_\_\_ is the range of movements of joints. 1
- Q29. \_\_\_\_\_ is concerned with the gross motor skills and mobility of children with special needs. 1
- Q30. Yama is the first element of \_\_\_\_\_. 1
- Q31. Friendship, solidarity, fair play and freedom from discrimination are the values of \_\_\_\_\_. 1
- Q32. \_\_\_\_\_ Opportunities are widely available in book writing in the field of Physical education and Sports. 1

**State True or False.**

- Q33. Shavasana is a meditative asana. (True/False) 1
- Q34. A Physiotherapist provides treatment, support and care for the student with special needs who have with difficulties in communication. (True/False) 1
- Q35. Passive flexibility is always more than active flexibility.(True/False) 1

**Answer the following questions briefly.**

- Q36. Define Physical education. 2
- Q37. Write down the function of IOC. 2
- Q38. Explain "Purity" and its kinds. 2

**Answer the following questions in detail.**

- Q39. Explain the concept of disorder. 3
- Q40. What do you understand by Speed Endurance? 3
- Q41. State the objectives of Fit India programme. 3

**Answer the following questions in detail.**

- Q42. Describe technology advancement in sports. 5
- Q43. Describe the formation and objectives of 'Indian Olympic Association'. 5
- Q44. Explain in detail about Yama. 5
- Q45. Highlights the characteristics of Intellectual Disability. 5