NVS PGT

Previous Year Paper

Physics 16 Dec 2022

1. When was the UNO 'International Day' of Education observed ?
   (1) 24th Jan 2022
   (2) 24th August 2022
   (3) 27th March 2022
   (4) 27th June 2022

2. Which of the following statements are correct about New India Literacy Programme, approved by the Union of India ?
   (A) is a centrally sponsored Scheme
   (B) aims to support the states and Union territories in promoting literacy among non literates in the age group below 15 years
   (C) is a scheme that has five components namely, Foundational Literacy and Numeracy, Critical Life Skills, Vocational Skills Development, Basic Education and continuing Education.
   (D) Implementation period is from 2021-22 to 2029-30

   Select the correct answer using the codes given below:
   (1) (A), (B) and (C) are correct
   (2) (A) and (C) are correct
   (3) (B) and (C) are correct
   (4) (B), (C) and (D) are correct.

3. Which Ministry has recently launched the 'Shrestha' scheme for high schools ?
   (1) Ministry of Health
   (2) Ministry of Corporate Affairs
   (3) Ministry of Social Justice and Empowerment
   (4) Ministry of Education

4. Which one of the following is not a fundamental duty ?
   (1) To renounce practices derogatory to the dignity of women
   (2) To render national service when called upon to do so.
   (3) To protect, monuments and places of national importance.
   (4) To preserve the rich heritage of our composite culture.

5. Where was the Winter Olympics 2022 held ?
   (1) India
   (2) China
   (3) Canada
   (4) Russia

6. Which country won the Gold medal in 44th FIDE chess Olympiad 2022 under Open Category ?
   (1) Armenia
   (2) India
   (3) Uzbekistan
   (4) USA

7. Who among the following has been awarded the V.Shantaram Lifetime Achievement award at MIFF, 2022 ?
   (1) Sanjay Bisht
   (2) Sanjit Narwekar
   (3) Ranjit Tiwari
   (4) Vikram Arora

8. Which of the following Country was part of joint bilateral defence cooperation training exercise 'SAMPRITI-X' with India during June 2022 ?
   (1) Nepal
   (2) Bangladesh
   (3) Sri Lanka
   (4) Iran

9. Under the Jal Jeevan Mission the government aims to provide water to all rural households through tap water connections by the year :
   (1) 2024
   (2) 2025
   (3) 2030
   (4) 2029

10. Match the following countries in **List - I** with the 2022 International Intellectual property (IP) Index overall score in **List - II**.

	List - I		**List - II**
(A)	India	(I)	55.86
(B)	Brazil	(II)	42.02
(C)	Russia	(III)	38.64
(D)	China	(IV)	46.64

Select the correct answer using the codes given below :
   (1) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)
   (2) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)
   (3) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
   (4) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

1. Five friends A, B, C, D and E are sitting around a round table facing towards the center of the table. A is sitting to the left of E, C is between A and D. B is to the right of E but left of D. Who is between B and C ?
   (1) D
   (2) B
   (3) A
   (4) E

2. Ketan gets more salary than Kumar but not as much as Rajesh. Rajesh gets more salary than Arun and Atul. Arun gets less salary than Kumar but his salary is not the minimum in this group. who is earning at second highest level ?
   (1) Rajesh
   (2) Kumar
   (3) Ketan
   (4) Arun

3. Seven types of fruits are lying on a plate in a circle. Banana is not between Orange and Apple. Pineapple is between Mango and Orange. Guava which is second to the left of Banana, is between Apple and Fig. Which of the following statement is true.
   (1) Fig is between Banana and Mango
   (2) Mango is between Banana and Pineapple
   (3) Orange is in the immediate right of Fig
   (4) Guava is in the immediate left of Apple

4. Three **statements** have been given, which are followed by three **conclusions** I, II and III. Assuming that the given statements are true, find out which of the conclusions is/are definitely true.
   Statements :
   $B \geqslant M, J < M, G \leq J$
   Conclusions :
   I. $G = M$
   II. $G < B$
   III. $B \geqslant G$
   (1) Only conclusions I and II are true
   (2) Only conclusion II is true
   (3) Only conclusions I and III are true
   (4) Only conclusions II and III are true

5. Three **statements** have been given, which are followed by two **conclusions** I and II. Assuming that the given statements are true, find out which of the conclusions is/are definitely true.

Statements :

$M > Q, N \geq M, Q \leq P$

Conclusions :

I $P \leq N$

II $N > Q$

(1) Only conclusion I is true

(2) Only conclusion II is true

(3) Both conclusions I and II are true

(4) Neither conclusion I nor II is true

6. There are six children A, B, C, D, E and F in a school. A and B are sisters and C is brother of B. D is the only daughter of A's uncle. E and F are the sons of the only brother of D's father. How is A related to F ?

(1) Cousin

(2) Sister

(3) Aunt

(4) Niece

7. The person at the door is the son of the only son of my grandfather. How is he related to me ?

(1) Cousin

(2) Brother

(3) Nephew

(4) Uncle

8. If A is sister of son of B's daughter, then how is A is related to B ?

(1) Sister

(2) Daughter

(3) Granddaughter

(4) Niece

9. Find the next term of the series.

3, 10, 15, 26, 35, ___?___

(1) 42

(2) 44

(3) 50

(4) 56

10. Find the next term of series.

CE, HJ, MO, RT, ___?___

(1) UW
(2) WX
(3) WY
(4) VW

11. Find the next term of the series.

DKM, FJP, HIS, JHV, ___?___

(1) HGY
(2) LGZ
(3) IGY
(4) LGY

12. Find the missing term of the series.

54, 47, 56, 49, ___?___ , 51, 60

(1) 55
(2) 48
(3) 50
(4) 58

13. Monu walked 160 m facing North from his house, then turned left and walked 120 m. What the difference between the shortest distance from his house and total distance moved by him ?

(1) 60 m
(2) 70 m
(3) 80 m
(4) 90 m

14. Amit walks 30 meter towards North, then turns left and walks 25 meter. He again turns left and walks 30 meter. Thereafter, he turns right and walks 35 meter. Now, how far and in which direction is he from his original place ?

(1) 45 meter towards north
(2) 55 meter towards south
(3) 60 meter towards west
(4) 75 meter towards east

15. Two statements are labeled below as **Assertion (A)** and **Reason (R)**.

Assertion (A) : Leakages in Household gas cylinders can be detected.

Reason (R) : LPG has a strong smell.

Select the correct answer with the help of code.

(1) Both **(A)** and **(R)** are true and **(R)** is correct explanation of **(A)**
(2) Both **(A)** and **(R)** are true and **(R)** is not a correct explanation of **(A)**
(3) **(A)** is true but **(R)** is false
(4) **(A)** is false but **(R)** is true

16. Two statements are labeled as **Assertion (A)** and **Reason (R)**.

Assertion (A) : Sun sets in the west.

Reason (R) : Earth revolves on its axis from west to East.

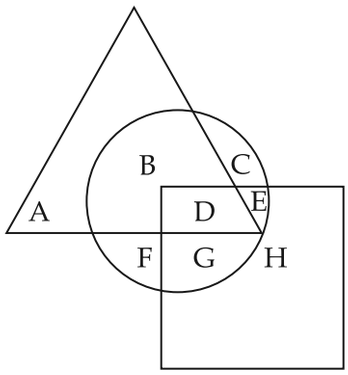
(1) Both **(A)** and **(R)** are true, and **(R)** is correct explanation of **(A)**

(2) Both **(A)** and **(R)** are true but **(R)** is not the correct explanation of **(A)**

(3) **(A)** is true but **(R)** is false

(4) **(A)** is false but **(R)** is true

17. In the Venn diagram given below, find out the alphabet that lies inside all the figures.



(1) B

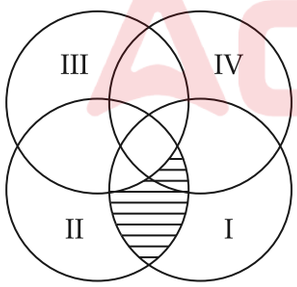
(2) D

(3) E

(4) F

18. Study the given venn diagram carefully.

The shaded region is represented by which people, if I for Kannada, II for English, III for Hindi and IV for Marathi Speaking people.



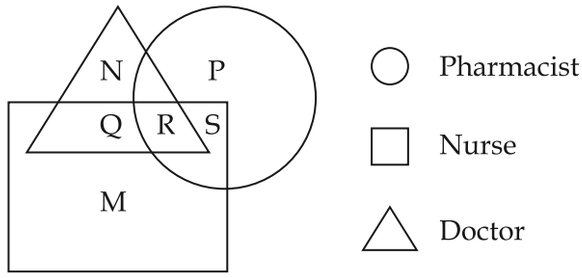
(1) People who speak English and Hindi

(2) People who speak Kannada, English and Hindi

(3) People who speak Kannada, English and Marathi

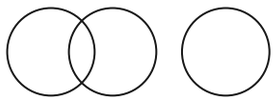
(4) People who speak Kannada and English

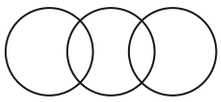
19. Study the given Venn diagram carefully.
Identify the alphabet which represents Nurses who are Doctors as well as pharmacist.

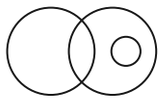


(1) R
(2) S
(3) P
(4) Q

20. Identify the venn diagram that best represents the relationship among cats, dogs and pets ?

(1) 

(2) 

(3) 

(4) 

1. Which of the following is a name of mobile operating System ?
   (1) ANDROID
   (2) UBUNTU
   (3) MAC OS
   (4) WINDOWS 10

2. Which out of the following office tool uses a term called. "Transition" as one of the functionality ?
   (1) MS Word
   (2) MS Access
   (3) MS Excel
   (4) MS Power Point

3. Which of following is not an example of input device ?
   (1) Mouse
   (2) Speaker
   (3) Bar Code Reader
   (4) QR Code Scanner

4. Which of the following combination of keys of keyboard will be used to PASTE the copied content in a document at the point of the cursor ?
   (1) CTRL + V
   (2) CTRL + P
   (3) CTRL + C
   (4) CTRL + S

5. Which of the following protocol of network is used while surfing a website on a browser ?
   (1) SMTP
   (2) FTP
   (3) HTTP
   (4) PPP

6. Which of the following is correct full form of CPU ?
   (1) Central Program Unit
   (2) Central Procedure Unit
   (3) Central Processing Unit
   (4) Control Processing Unit

7. Ramya has recently started working an office tools and got an assignment, which contains lots of calculations on tabulated data. Which of the following office tool you will suggest her to use for the same ?
   (1) MS Point
   (2) MS Power point
   (3) MS Excel
   (4) MS Word

8. Jones is looking for storing video files, which he needs to carry place to place to be shown on the client's computer/laptops. Which of the following storage device will be most appropriate for the same ?

Assuming the files require storage space more than 600 GB.

(1) Pen Drive
(2) CD Rom
(3) DVD
(4) External SSD

9. Which of the following statement is true about SAFE Networking ?

(1) Exchanging passwords amongst close friends
(2) Posting motivational quotes on social networking site
(3) using public computers for frequent financial transactions
(4) Posting personal whereabouts on Social Networking Sites

10. What should be done when an email with a message "you won 5000 Pounds, please click here and share your details to claim the same" ?

(1) We should immediately click the link and see what details are asked
(2) We should click the link and furnish the required details
(3) We should immediately share the email in our friend's group
(4) We should simply delete such email from INBOX

1. Which of the following is not an objective of teaching ?
   (1) To shape learners' behaviour
   (2) To attain positive attitude
   (3) To develop innate capabilities of learners
   (4) To develop scientific attitude

2. A good learner is not
   (1) ready to learn from anyone.
   (2) ready to modify his/her behaviour.
   (3) determined to attain success.
   (4) mentally alert.

3. To promote creative thinking among the students, a teacher should focus on the :
   (1) emotions of the students
   (2) observations of the students
   (3) habits of the students
   (4) perception of the students

4. A student is under stress due to some problem. To help the student in overcoming the stress, the teacher should ask the student to :
   (1) go for the medical treatment of the stress.
   (2) find root cause of the problem and decide future strategy.
   (3) call his/her parents to school and take the student outside the city.
   (4) go for a few days holiday.

5. Which of the following is not a characteristic of a good learner ?
   (1) Dynamic
   (2) Good Motivation level
   (3) Experimental by nature
   (4) Giving respect to all traditions

6. Which one of the following factors should be ignored for good teaching ?
   (1) Motivation level of the teacher
   (2) Cultural heritage of teacher
   (3) Previous learning of the teacher
   (4) A worldly successful teacher

7. What teaching method will you adopt to teach "Communal harmony" to class X students ?
   (1) Team Teaching Method
   (2) Debate Method
   (3) Discussion and Dialogue Method
   (4) Question Answer Method

8. For teaching topics related to Social Studies to secondary students, which teaching method will you adopt ?
   (1) Demonstration Method
   (2) Data Based Discussion Method
   (3) Hieuristic Method
   (4) Team Teaching Method

9. Which of the following teaching aids will be the most effective for teaching the topic "Bheel Tribe" to class IX students ?
   (1) Online video chatting with a "Bheel Tribe lady".
   (2) Discussion on the topic "Bheel Tribe".
   (3) A comprehensive lecture on Bheel Tribes.
   (4) Ten film strips on Bheel Tribe.

10. A teacher announced in his/her first class of the session, "I will teach throughout the year. I will not take any examination but at the end of the year the final examination will decide if you are pass or fail." This is an example of :
   (1) Formative evaluation
   (2) Criterion based evaluation
   (3) Normative evaluation
   (4) Summative evaluation

1. The time period of a simple pendulum is given by
$T = kl^a g^b$
where k, a and b are constants. By using dimensional analysis, the values of a and b are :
(l is the length of pendulum and g is the acceleration due to gravity)
(1) 1, 1
(2) $\frac{1}{2}, \frac{1}{2}$
(3) $-\frac{1}{2}, -\frac{1}{2}$
(4) $\frac{1}{2}, -\frac{1}{2}$

2. Two statements are given below, one is labelled as **Assertion (A)** and other as **Reason (R)**.

Assertion (A) : Expression : $\sqrt{\frac{\text{Young modulus}}{\text{Density}}}$ has units m/s

Reason (R) : Acceleration has dimensions as that of $\frac{1}{\left(\sqrt{\mu_0 \varepsilon_0}\right)t}$

Select the correct answer using code below.
(a) **(A)** and **(R)** both are true and **(R)** is the correct explanation of **(A)**.
(b) **(A)** and **(R)** both are true and **(R)** is not the correct explanation of **(A)**.
(c) **(A)** is true but **(R)** is false.
(d) **(A)** is false but **(R)** is true.

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

3. Physical quantity, which have neither units nor dimensions is :
(1) Pressure
(2) Stress
(3) Poisson's ratio
(4) Bulk modulus

4. A small ball is moving with uniform speed v in a circle of radius R. If T is the time period of its motion, its acceleration is given by :
(1) $\left(\frac{2\pi}{T}\right)^2 R$
(2) $\left(\frac{\pi}{T}\right)^2 R$
(3) $\left(\frac{2\pi}{T}\right)^2 R^2$
(4) $\left(\frac{\pi}{T}\right)^2 R^2$

5. The position x (in meter) of four objects A, B, C and D are given by following equations where time t is in second :

A : $x = 3.0 + 4.0\,t + 5.0\,t^2$

B : $x = -4.0 + 5.0\,t$

C : $x = 5.0\,t + 6.0\,t^2$

D : $x = 6.0\,t^3$

Which of them is moving with a uniform speed ?

(1) A

(2) B

(3) C

(4) D

6. The velocity v (in m/s) of an object changes with time t (in second) as :

$v = 2.0 + 1.0\,t^2$.

The average acceleration of the object for the duration t = 1.0 s to t = 3.0 s is :

(1) 4.0 m/s^2

(2) 7.0 m/s^2

(3) 9.0 m/s^2

(4) 11.0 m/s^2

7. Consider two vectors $\vec{A}$ and $\vec{B}$, as given below :

$\vec{A} = 2\hat{i} + 2\hat{j}$

$\vec{B} = 1\hat{i} + 3\hat{j}$

Where $\hat{i}$ and $\hat{j}$ are unit vectors along x - axis and y - axis respectively.

The angle between $\vec{A}$ and $\vec{B}$, when their tails coincide is equal to :

(1) $\cos^{-1}\left(\sqrt{\frac{2}{5}}\right)$

(2) $\cos^{-1}\left(\sqrt{\frac{3}{5}}\right)$

(3) $\cos^{-1}\left(\sqrt{\frac{4}{5}}\right)$

(4) $\cos^{-1}\left(\frac{2}{5}\right)$

8. A small ball is projected from (0 m, 0 m) in x - y plane at t = 0 s. Its velocity $\vec{v}$ (in m/s) at t = 1.0 s is $\vec{v} = 32\hat{i} + 14\hat{j}$. Here $\hat{i}$ and $\hat{j}$ are unit vectors along x - axis and y - axis respectively. The time of flight of the ball is : (take $g = 10\ m/s^2$)

(1) 2.4 s
(2) 4.8 s
(3) 6.0 s
(4) 7.2 s

9. Komal is cycling on a level circular road of radius 16.0 m. The coefficient of static friction between the tyres and the road is 0.1. The maximum speed with which she can cycle without slipping is : (take $g = 10\ m/s^2$)

(1) 2.0 m/s
(2) 4.0 m/s
(3) 6.0 m/s
(4) 8.0 m/s

10. A man (mass 65 kg) stands on a weighing scale in a lift which is moving upwards with a uniform acceleration of 2 m/s^2. The reading in the weighing scale will be : (take $g = 10\ m/s^2$)

(1) 26 kg
(2) 39 kg
(3) 52 kg
(4) 78 kg

11. Two forces $\vec{F}_1$ and $\vec{F}_2$, given by :

$\vec{F}_1 = (6.0\ N)\ \hat{i}$ and $\vec{F}_2 = (8.0\ N)\ \hat{j}$, act simultaneously on a ball of mass 1.0 kg. Here $\hat{i}$ and $\hat{j}$ are unit vectors along x-axis and y-axis respectively. The acceleration of the ball has a magnitude _____ and it makes an angle of _____ with the x - axis.

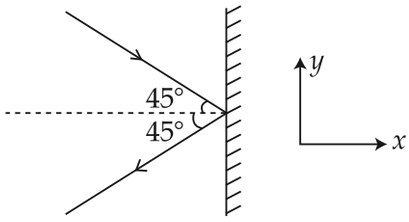
(1) $5.0\ m/s^2, \tan^{-1}\left(\frac{3}{4}\right)$

(2) $5.0\ m/s^2, \tan^{-1}\left(\frac{4}{3}\right)$

(3) $10\ m/s^2, \tan^{-1}\left(\frac{3}{4}\right)$

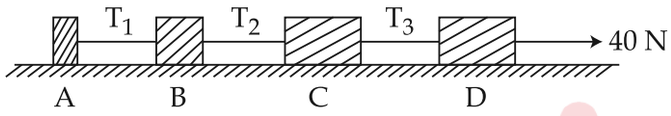
(4) $10\ m/s^2, \tan^{-1}\left(\frac{4}{3}\right)$

12. A ball of mass 0.28 kg strikes a rigid wall with a speed of 4.0 m/s and is reflected with the same speed, as shown in the figure. The magnitude of impulse imparted to the ball by the wall is close to :



(1) 0.8 Ns
(2) 1.6 Ns
(3) 3.1 Ns
(4) 0

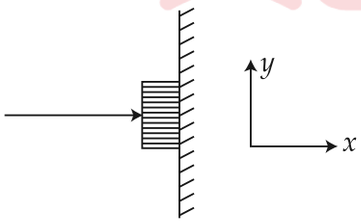
13. Four boxes A(1.0 kg), B(2.0 kg), C(3.0 kg) and D(4.0 kg) are lying on a smooth horizontal surface and are connected by light strings, as shown in the figure.



Box D is pulled by a force of 40 N applied horizontally. T_1, T_2 and T_3 are tensions in the strings, as shown. The ratio $\left(\frac{T_3}{T_2}\right)$ is :

(1) 1
(2) 2
(3) 3
(4) 4

14. A box of mass 0.30 kg is pressed against a wall by a force of 9.0 N, as shown in the figure. The coefficient of static friction between the wall and the block is 0.5.
The magnitude of net force exerted by the wall on the box is close to : (take $g = 10\ m/s^2$)

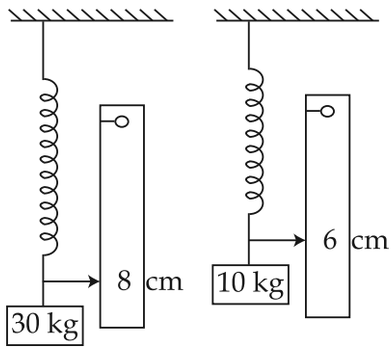


(1) 3.0 N
(2) 6.0 N
(3) 9.0 N
(4) 9.5 N

15. A ball is made to uniformly move on a horizontal circular path. The work done by the agency providing necessary force for one complete revolution of the ball is zero because :
(1) the average force for each revolution is zero.
(2) there is no friction.
(3) the force is perpendicular to the velocity of ball throughout the motion.
(4) there is no gravitational force acting on the ball.

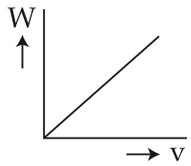
16. As shown in the two figures below the pointer attached to springs indicate different extensions in two identical springs.

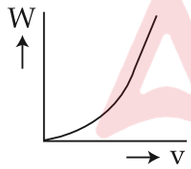
Which one of the following values correctly gives the mass that need to be hunged through either of the two springs to produce an extension of 10 cm ? ($g = 10$ m/s^2)

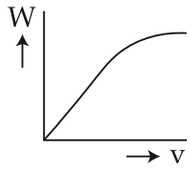


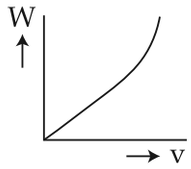
(1) 8 kg
(2) 18 kg
(3) 42 kg
(4) 50 kg

17. An object starts moving on a frictionless surface under the application of a uniform horizontal force. Which one of the following graph correctly depicts, the work(W) done by the force as a function of object speed (v) ?

(1) 

(2) 

(3) 

(4) 

18. An object moves along a straight line from position $x = 0$ m to $x = 5$ m under a variable force $(6x^2 - 3x + 9)$ N. What is the work done by the force in moving the object from $x = 0$ m to $x = 4$ m ?

(1) 515 N.m
(2) 257.5 N.m
(3) 280 N.m
(4) 140 N.m

19. A motor delivers a power of 30 kW to a lift of 900 kg mass to uniformly carry 600 kg load in upward direction. If the frictional force that opposes the motion of lift is 6000 N, what is the speed of the lift ? (The acceleration due to gravity $= 10$ m/s^2)

(1) about 2.0 m/s
(2) about 1.8 m/s
(3) about 1.4 m/s
(4) about 1.0 m/s

20. Two bodies A and B of masses 10 kg and 2 kg respectively are moving in space. Their position are changing with time as :

$\vec{r}_A = (5\hat{i} - 7\hat{j} - 3\hat{k})$ t (m)

$\vec{r}_B = (-13\hat{i} + 35\hat{j} - 9\hat{k})$ t (m)

(The symbols carry their usual meanings). What is the velocity of their centre of mass ?

(1) $(6\hat{i} + 3\hat{j} - 4\hat{k})$ m/s
(2) $(-7\hat{i} + 28\hat{j} - 12\hat{k})$ m/s
(3) $(2\hat{i} - 4\hat{k})$ m/s
(4) $2(\hat{i} - \hat{k})$ m/s

21. A flywheel which is rotating initially has an angular speed of 18 rad/s. It is brought down to rest at a rate of 2.0 rad/s^2. What is the appropriate number of turns the flywheel might have made before it stops ?

(1) 13
(2) 26
(3) 39
(4) 52

22. A light inextensible cord is wound round the rim of a frictionless pulley of mass 10 kg and radius 15 cm mounted on a horizontal axis with frictionless bearings. The free end of the cord is pulled by a steady force of 20 N. What is the value of angular acceleration of the pulley ?

(1) $\left(\frac{80}{3}\right)$ N/kg

(2) $\left(\frac{80}{3}\right)$ rad s^{-2}

(3) $\left(\frac{12\pi}{9}\right)$ rad s^{-2}

(4) $\left(\frac{24\pi}{5}\right)$ rad s^{-2}

23. An electron having mass 9.0×10^{-31} kg is revolving around a nucleus of an atom in an approximate circular orbit of radius 0.25 m. The linear speed of the electron is 10^7 m/s. The kinetic energy and the angular momentum of the electron are respectively :

(1) 45×10^{-17} J; 22.5×10^{-34} kg m^2/s

(2) 4.5×10^{-17} J; 2.25×10^{-34} kg m^2/s

(3) 280 eV; 2.25×10^{-33} kg m^2/s

(4) 280 eV; 22.5×10^{-33} kg m^2/s

24. Assuming the earth is a uniform sphere of radius R, the variation in the value of acceleration due to gravity with respect to height (h) and with respect to depth d above and below the surface of earth are approximately :

[g is the acceleration due to gravity on the surface of the earth.]

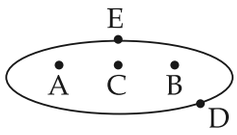
(1) $g\left(1-\frac{2h}{R}\right)$ and $g\left(1-\frac{2d}{R}\right)$ respectively

(2) $g\left(1-\frac{h}{R}\right)$ and $g\left(1-\frac{d}{R}\right)$ respectively

(3) $g\left(1-\frac{2h}{R}\right)$ and $g\left(1-\frac{d}{R}\right)$ respectively

(4) $g\left(1-\frac{h}{R}\right)$ and $g\left(1-\frac{2d}{R}\right)$ respectively

25. The figure given below shows an elliptical orbit of a planet around the Sun.



Which letters, labels the correct positions of the Sun and planet respectively ?

(1) A and C

(2) A and B

(3) A and D

(4) C and E

26. A 1000 kg satellite is orbiting about the earth in a circular orbit of radius twice the radius of earth. It now needs to be transfered to another circular orbit of radius four times the radius of earth. The acceleration due to gravity at the surface of the earth is 9.8 m/s^2 and the radius of the earth is 6400 km. The amount of energy needed to transfer the satellite; the changes in its kinetic and potential energies, respectively are close to :

(1) 2.6×10^9 J; 0; 2.6×10^9 J

(2) 2.6×10^9 J; 1.3×10^9 J; 1.3×10^9 J

(3) 2.6×10^9 J; -2.6×10^9 J; 5.2×10^9 J

(4) 2.6×10^9 J; $+2.6\times10^9$ J; 0

27. Two cylindrical metallic wires A and B of same material having cross-sectional area A and 2A, and lengths L and 2L respectively are stretched within the proportional elastic limits by the same force F. If the wire A is stretched by 1 cm, the stretch in the wire B would be :

(1) 0.25 cm

(2) 0.50 cm

(3) 1.00 cm

(4) 2.50 cm

28. Match the **List I** and **List II**.

	List I (Physical quantity)		**List II (Expression)**
(A)	Speed of sound in air	(p)	$\sqrt{\frac{\gamma RT}{M}}$
(B)	r.m.s. speed of gas molecules	(q)	$\sqrt{\frac{8RT}{\pi M}}$
(C)	Average speed of gas molecules	(r)	$\sqrt{\frac{3RT}{M}}$
(D)	Most probable speed of gas molecules	(s)	$\sqrt{\frac{2RT}{M}}$

	(A)	(B)	(C)	(D)
(1)	(p)	(r)	(q)	(s)
(2)	(r)	(p)	(q)	(s)
(3)	(p)	(q)	(r)	(s)
(4)	(q)	(r)	(s)	(p)

29. Two gases are at absolute temperatures 300 K and 350 K respectively. Ratio of average kinetic energy of their molecule is :

(1) 6 : 7

(2) 7 : 6

(3) 36 : 49

(4) 49 : 36

30. Two temperature scales A and B are related by

$$\frac{A-42}{110}=\frac{B-72}{220}$$

At which temperature the two scales would show same readings :

(1) $-42°C$

(2) $+40°C$

(3) $-40°C$

(4) $12°C$

31. The length of a uniform aluminium rod is 1.0 m and its area of cross-section is $5.0\times10^{-4}\ m^2$. It's one end is kept at 300 °C and the other end at 100 °C. The thermal conductivity of the aluminium is 205 $Js^{-1}m^{-1}K^{-1}$. If the heat loss through the sides of rod by convection and radiation are negligible and the heat flow is normal to the faces of the rod, the amount of approximate heat flow in 5 minutes would be :

(1) 600 J

(2) 3000 J

(3) 1500 J

(4) 6000 J

32. If molecular density of a gas is n and the diameter of its molecules is d. Then mean free path of its molecules is :

(1) $\frac{\pi}{d^2n}$

(2) $\frac{1}{\sqrt{2}\,\pi d^2n}$

(3) $\frac{1}{\pi\, d\, n}$

(4) $\frac{1}{3\sqrt{2}\,\pi\, d\, n}$

33. A gas for which $\gamma=1.5$ is suddenly compressed to $\frac{1}{4}^{th}$ of initial volume, then what is the ratio of final to initial pressures ? (γ is the ratio of specific heat of the gas at constant pressure and at constant volume)

(1) 1 : 16

(2) 1 : 8

(3) 1 : 4

(4) 8 : 1

34. Which one of the following thermodynamic process may lead to a zero change in entropy ?

(1) A non - cyclic isobaric process

(2) A non - cyclic isochoric process

(3) A non - cyclic isothermal process

(4) A closed cycle

35. A Carnot engine working between 0°C to 100°C takes up nearly 1120 J of heat from the source per cycle. The amount of heat rejected per cycle to the sink is close to :
(1) 0 J
(2) 560 J
(3) 900 J
(4) 1020 J

36. The mass of 1 mole of air is 29.0×10^{-3} kg. Considering the air as an ideal gas, the speed of sound in air at standard temperature and pressure is close to :
(1) 342 m/s
(2) 330 m/s
(3) 300 m/s
(4) 280 m/s

37. Two travelling sinusoidal sound waves have same amplitudes and frequencies. They can produce a fully constructive interference only if :
(1) they travel in the same direction and are 180° out of phase.
(2) they travel in the same direction and are in phase.
(3) they travel in opposite directions and are in phase.
(4) they travel in opposite directions and are 180° out of phase.

38. A source producing sound of frequency 1280 Hz is moving with a speed of 36 km/h towards a distant observer. The speed of sound in air is 330 m/s. The observer moves towards the source with a speed of 72 km/h . The frequency of sound as heard by the observer is :
(1) 1400 Hz
(2) 1317 Hz
(3) 1297 Hz
(4) 1240 Hz

39. A spring having spring constant of 90 N/m is attached with a block of mass 200 g. It oscillates in a surrounding viscous medium having 40 g/s damping constant. The time period of oscillation and the time taken for its mechanical energy to drop to half of its initial value are respectively about :
(1) 3 s, 3.5 s
(2) 3 s, 7 s
(3) 0.3 s, 7 s
(4) 0.3 s, 3.5 s

40. A pendulum bob executes simple harmonic motion. Which one of the following statements is true for the bob's motion ? (Air resistance can be neglected)
(1) It has constant speed throughout a complete cycle.
(2) It has varying time period throughout a complete cycle.
(3) It has varying acceleration throughout a complete cycle.
(4) It has varying weight throughout a complete cycle.

41. Amplitude of a damped harmonic oscillator :
(1) decreases linearly
(2) decreases exponentially
(3) increases linearly
(4) remains constant

42. The phase difference (ϕ) and the path difference (χ) of a progressive wave of wavelength 'λ' are related as :
(1) $\phi = \frac{2\pi\chi}{\lambda}$
(2) $\phi = \frac{\chi}{2\pi\lambda}$
(3) $\phi = 2\pi\lambda\chi$
(4) $\phi = \frac{\lambda}{2\pi\chi}$

43. Two charges A(1.0 μC) and B(-5.0 μC) are located at points (0 cm, 0 cm) and (4 cm, -3cm) respectively. The force exerted by charge A on charge B is : ($\hat{i}$ and $\hat{j}$ are unit vectors along x - axis and y - axis respectively and $\left[\frac{1}{4\pi\varepsilon_0}\right] = 9\times10^9$ N m^2/C^2)
(1) $-(10.8\text{ N})\hat{i} + (14.4\text{ N})\hat{j}$
(2) $(10.8\text{ N})\hat{i} - (14.4\text{ N})\hat{j}$
(3) $-(14.4\text{ N})\hat{i} + (10.8\text{ N})\hat{j}$
(4) $(14.4\text{ N})\hat{i} - (10.8\text{ N})\hat{j}$

44. The magnitudes of electric fields due to an electric dipole (consisting of charges q and $-$q, separated by distance 2a) at a distance r>>a, on its axis and on its equatorial plane are E_1 and E_2 respectively. The ratio $\left(\frac{E_2}{E_1}\right)$ is :
(1) $\frac{1}{2}$
(2) 1
(3) 2
(4) $\frac{1}{4}$

45. Four charges A (18 μC), B (27 μC), C (−18 μC) and D (−27 μC) are located at points (0 cm, 0 cm, 0 cm), (0 cm, 5 cm, 0 cm), (0 cm, 7 cm, 0 cm) and (0 cm, 10 cm, 0 cm) respectively. A sphere of radius 6 cm is drawn with its centre at (0 cm, 0 cm, 0 cm). The electric flux through this sphere is :

(take $\varepsilon_0 = 9\times10^{-12}\ C^2\ N^{-1}m^{-2}$)

(1) 0 Vm

(2) 2.0×10^6 Vm

(3) 5.0×10^6 Vm

(4) 10×10^6 Vm

46. A capacitor is connected to a 50 V battery. The magnitude of charge on each plate is 10 mC. The energy stored in the capacitor is :

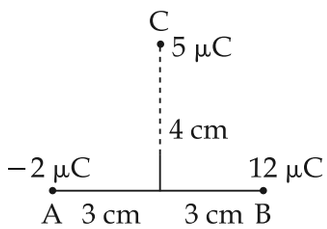
(1) 0.25 J

(2) 0.30 J

(3) 0.35 J

(4) 0.50 J

47. Three charges of −2 μC, 12 μC and 5 μC are placed at points A, B and C respectively, as shown in figure. The potential energy of this system of charges is : (take $\left[\frac{1}{4\pi\varepsilon_0}\right] = 9\times10^9 N\ m^2/C^2$)



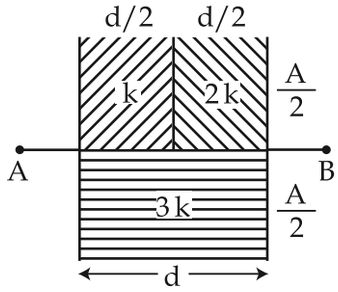
(1) 0.54 J

(2) 1.62 J

(3) 5.4 J

(4) 16.2 J

48. A parallel plate capacitors with plate area A and plate separation d is filled with three dielectric slabs of dielectric constants k, 2 k and 3 k, as shown in figure. The area and thickness of three slabs are $\left(\frac{A}{2}, \frac{d}{2}\right)$, $\left(\frac{A}{2}, \frac{d}{2}\right)$ and $\left(\frac{A}{2}, d\right)$ respectively. C_o and C are the capacitances of the capacitor without slabs and with slabs. Then $\left(\frac{C}{C_o}\right)$ is :



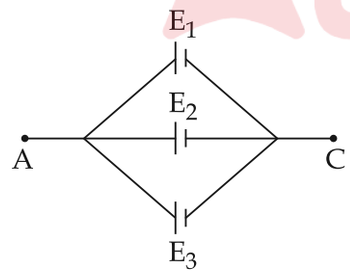
(1) $\left(\frac{9}{6}\right)k$

(2) $\left(\frac{11}{6}\right)k$

(3) $\left(\frac{13}{6}\right)k$

(4) $\left(\frac{15}{6}\right)k$

49. Three cells E_1, E_2 and E_3, having emfs 6 V, 3 V and 2 V and internal resistances 1 Ω, 0.5 Ω and $\left(\frac{2}{3}\right)$ Ω respectively are connected as shown in figure. The equivalent emf of the combination, between points A and C is :



(1) 11 V

(2) 7 V

(3) $\left(\frac{10}{3}\right)$ V

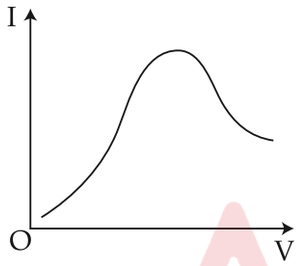
(4) 3 V

50. Which one of the statements is true for carbon resistors ?
(1) They are large in size and usually have resistance values in higher range.
(2) They are compact in size and usually have resistance values in higher range.
(3) They are compact in size and usually have resistance values in lower range.
(4) They are compact in size, expensive and made of different colours.

51. Two bulbs of 40 W and 60 W are connected with a 220 V main line. The ratio of their resistances are :
(1) 3 : 4
(2) 4 : 3
(3) 2 : 3
(4) 3 : 2

52. A wire of resistance R is divided in 10 equal parts. These parts are connected in parallel. The equivalent resistance of such combination will be :
(1) 0.01 R
(2) 0.1 R
(3) 10 R
(4) 100 R

53. In an electric circuit, a device is connected with a variable power source. The voltage - current graph for the device is seen to be as shown below.



This device could be a :
(1) Nichrome wire
(2) Si - device
(3) Ga As device
(4) Copper wire

54. Pieces of Al and Ge are placed at room temperature before they are heated. Which one of the following statements is true for their resistances in this context ?
(1) Resistance will increase in each case
(2) Resistance will decrease in each case
(3) Resistance of Al will increase while that of Ge will decrease
(4) Resistance of Al will decrease while that of Ge will increase

55. Which of the following is a ferromagnetic substance ?
(1) Sodium
(2) Water
(3) Sodium chloride
(4) Cobalt

56. A current of 6.0 A is maintained in a long straight wire. The magnitude of magnetic field at a distance of 30 cm from the wire is : ($\mu_o = 4\pi \times 10^{-7}$ Tm/A)

(1) 2.0 μT

(2) 4.0 μT

(3) 12.6 μT

(4) 25.1 μT

57. A rectangular coil of sides 8.0 cm and 10 cm, with 100 closely wound turns, carries a current of 2.0 A. It is suspended vertically in a uniform magnetic field of 0.5 T such that the plane of the coil makes an angle of 30° with the field. The magnitude of torque experienced by the coil is close to :

(1) 0.20 Nm

(2) 0.40 Nm

(3) 0.69 Nm

(4) 1.39 Nm

58. Two long straight parallel conductors A and B, separated by 12 cm, carry currents of 6 A and 12 A respectively in the same direction. The force exerted by conductor B on 1 cm segment of conductor A is : ($\mu_o = 4\pi \times 10^{-7}$ Tm/A)

(1) attractive with a magnitude of 0.6 μN

(2) repulsive with a magnitude of 0.6 μN

(3) attractive with a magnitude of 1.2 μN

(4) repulsive with a magnitude of 1.2 μN

59. A 2.0 cm straight segment of a wire (part of a circuit), centred at (0 cm, 0 cm) lies along y - axis. It carries a current of 10 A along y - axis. The magnetic field at a point (−20 cm, 0 cm) is ($\hat{i}$, $\hat{j}$ and $\hat{k}$ are unit vectors along x - axis, y - axis and z - axis respectively and $\mu_o = 4\pi \times 10^{-7}$ Tm/A)

(1) $-(1.0\ \mu T)\hat{k}$

(2) $(1.0\ \mu T)\hat{k}$

(3) $-(0.5\ \mu T)\hat{k}$

(4) $(0.5\ \mu T)\hat{k}$

60. The energy required to build up a current I in a coil of self - inductance L is given by :

(1) $\left(\frac{1}{4}\right)LI^2$

(2) $\left(\frac{1}{2}\right)LI^2$

(3) LI^2

(4) $4LI^2$

61. A Solenoid of cross-sectional area $5\times10^{-4}m^2$ and length 1.5 m consists of 100 turns per unit length. The self inductance of the solenoid is : ($\mu_o=4\pi\times10^{-7}$ Tm/A)

(1) 1.5π μH
(2) 3.0π μH
(3) 0.15π μH
(4) 0.30π μH

62. A 1.0 m long meatallic rod is rotated with a frequency of 30 rev/s about an axis perpendicular to the rod passing through its one end. The other end of the rod is in contact with a circular metallic ring. A constant and uniform magnetic field of 0.8 T exists in the region parallel to the axis. The emf developed between the centre and the ring is :

(1) 6 V
(2) 6π V
(3) 24 V
(4) 24π V

63. A sinusoidal voltage of peak value 282 V and frequency 50 Hz is applied to a series LCR circuit ($R=16\ \Omega$, $X_L=32\ \Omega$, $X_C=20\ \Omega$, symbols have their usual meanings). The power dissipated in the circuit and the power factor are respectively :

(1) 3.2 kW, 0.4
(2) 3.2 kW, 0.8
(3) 1.6 kW, 0.4
(4) 1.6 kW, 0.8

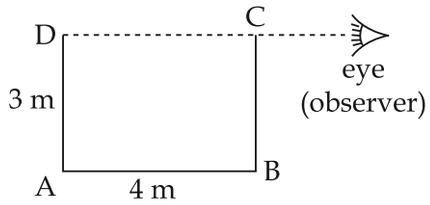
64. A parallel beam of monochromatic light in air is incident on a plane glass slab. Which one of the following statements is true in this context ?

(1) The beam remains parallel inside the glass slab but its direction may change.
(2) The beam undergoes dispersion inside the glass slab.
(3) The beam becomes diverging inside the glass slab.
(4) The parallel beam would always pass through the plane glass slab undeviated.

65. The radius of curvature of a convex spherical surface is 10 cm. Light from a point source is incident on this surface and it gets refracted into a medium whose refractive index is 1.5. If the beam is expected to travel parallel to the principal axis after refraction, where should be the light source be placed on the principal axis ? (The light source is placed in air.)

(1) 6.7 cm from the surface
(2) 10 cm from the surface
(3) 15 cm from the surface
(4) 20 cm from the surface

66. A metallic tank as shown in the figure is filled with a liquid whose properties are not known. An observer, whose eyes are in level with the top of this rectangular tank, is just able to see the corner point A. What could be the refractive index of the liquid ?



(1) 1.75
(2) 1.67
(3) 1.50
(4) 1.25

67. Which one of the following is related with the prediction of the electromagnetic wave nature of light ?
(1) Huygens principle
(2) Newton's corpuscular model
(3) Snell's law
(4) Maxwell theory

68. A refracting telescope whose objective lens has focal length 1500 cm, is used to view the moon. The eye - piece of the telescope has 1.0 cm focal length. The diameter of moon is 3.5×10^6 m and the average distance of moon from the telescope is about 3.8×10^8 m. What is the radius of the image of the moon formed by the objective lens ?
(1) 138 cm
(2) 69 cm
(3) 13.8 cm
(4) 6.9 cm

69. Two polaroids are so placed in air that the intensity of light ($\lambda = 500$ nm) transmitted by them is maximum. Now if one of the polaroid is rotated through an angle of 60°, then to what percentage of its maximum value is the intensity of transmitted light will be reduced ?
(1) It will remain the same
(2) It will be reduced to 75%
(3) It will be reduced to 60%
(4) It will be reduced to 25%

70. For a certain photosensitive material in a photoelectric apparatus, which one of the following statements is **NOT** true ?
(1) The photoelectric current is directly proportional to the intensity of incident radiation of a given frequency.
(2) The saturation current is proportional to the intensity of incident radiation of a given frequency.
(3) The stopping potential is independent of the intensity of incident radiation of a given frequency.
(4) Both the saturation current and stopping potential vary linearly with the intensity of incident radiation of a given frequency.

71. What is the de Broglie wavelength associated with an electron moving with a speed of 4.12×10^5 m/s. (mass of electron $= 9.11 \times 10^{-31}$ kg; Planck's constant $= 6.63 \times 10^{-34}$ J.s)

(1) 0.176 nm

(2) 0.88 nm

(3) 176

(4) 1.76 nm

72. An electron is accelerated through a potential difference of 50 V. Which one of the following statements could be true for this electron ? (Planck's constant $= 6.63 \times 10^{-34}$ J.s, mass of electron $= 9.11 \times 10^{-31}$ kg, charge of electron $= 1.6 \times 10^{-19}$ C).

(1) The associated de Broglie wavelength is about 0.175 nm that is of the order of X - ray wavelengths.

(2) The associated de Broglie wavelength is about 170 nm that is of the order of Infrared wavelengths.

(3) The associated de Broglie wavelength is about 125 nm that is of the order of X - ray wavelengths.

(4) The associated de Broglie wavelength is about 300 nm that corresponds to visible region.

73. Which one of the following statements is **NOT** correct ?

(1) The nuclear forces are short - range.

(2) The nuclear force between neutron - neutron, proton - proton, proton - neutron is approximately same.

(3) The nuclear forces are stronger than both Coulombian forces and gravitational forces.

(4) The nuclear forces between neutron - neutron and proton - proton are defined differently.

74. Work function of a metal is :

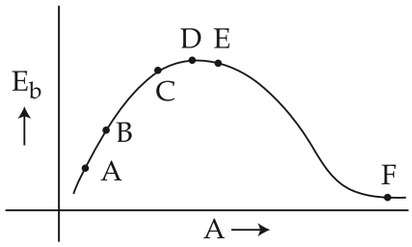
(1) the minimum energy needed by an electron to come out from the metal surface.

(2) the minimum energy needed by an electron to come out from the nucleus of the metallic atom.

(3) the minimum energy needed by an nucleon to come out from the nucleus of the metal.

(4) the total work done by an electron to come out from the metal surface.

75. The graph below shows the binding energy per nucleon (E_b) as a function of atomic mass number (A).



Symbols A, B, C, D, E and F represents different nuclei. Consider the following three reactions :

(a) $A + B \rightarrow C + \varepsilon$

(b) $C \rightarrow A + B + \varepsilon$

(c) $F \rightarrow D + E + \varepsilon$

Here the symbol ε represents the energy released. Which of these reactions have ε positive ?

(1) (a) and (c) only
(2) (a) and (b) only
(3) (c) only
(4) (a) only

76. The mass of a ${}_8O^{16}$ nuclide is 15.99053 u. What is the mass defect of this nuclide in units of MeV/c^2 ? ($c = 3 \times 10^8$ m/s, mass of electron = 0.00055 u; mass of proton = 1.00727 u; mass of neutron = 1.00866 u; electron charge = 1.6×10^{-19} C; and 1 u = 1.6605×10^{-27} kg)

(1) about 100
(2) about 930
(3) about 500
(4) about 127

77. In an alpha - particle scattering experiment, an alpha - particle of 4 MeV energy approaches a target nuclei that has atomic number 79. What is the approximate distance of closest approach of the alpha - particle before it comes momentarily to rest and reverses its direction ? (charge on an electron = 1.6×10^{-19} C; $4\pi\varepsilon_0 = (9 \times 10^{+9})^{-1}$ in SI units.)

(1) 5.6 fm
(2) 5.6×10^{-16} cm
(3) 5.6×10^{-14} cm
(4) 5.6×10^{-12} cm

78. A common base transistor amplifier has an input resistance of 40 Ω and output resistance of 200 kΩ. The collector load is 1 kΩ. The input signal voltage applied between emitter and base is 400 mV. If the current amplification gain is 1, the voltage amplification is :

(1) 200
(2) 40
(3) 25
(4) 20

79. In a n-type semiconductor the charge carriers are :
(1) only hole
(2) only electron
(3) both, electrons are more and holes are less
(4) both, electrons are less and holes are more

80. Which one of the following statements is true for a Light Emitting Diode ?
(1) It emits light when both electrons and holes are sent from the n - region to p - region.
(2) It emits light when electrons are sent from the n - region to p - region and holes are sent from p - region to n - region.
(3) It emits light when electrons collide with atoms.
(4) It emits light when electrons are accelerated by the electric field in the depletion region.

1. **Read the passage given below and answer the question that follow by choosing the correct option out of the given one :**

In my grandmother's room, the books were lying down; she used to borrow them from a lending library and I never saw more than two at a time. These trashy works reminded me of New Year sweetmeats because their shiny flexible covers seemed to be cut out of glazed paper. Bright, white, almost new, they served as an excuse for petty mysteries.

Each Friday, my grandmother would get dressed to go out and say : 'I'm going to take them back;' when she returned, and had taken off her black hat and her veil, she would take them out of her muff and I would wonder mystified: 'Are they the same ones?' She used to 'cover' them carefully and then, having chosen one, she would settle herself by the window, in her winged armchair, put on her spectacles, sigh with pleasure and weariness, and lower her eyelids with a delicately voluptuous smile which I have since discovered on the lips of the Mona Lisa; my mother would fall silent, inviting me to keep quiet, and I would think about Mass, death or sleep: I invested myself with a holy silence. From time to time, Louise would give a chuckle; she would call to her daughter, point at a line and the two women would exchange a conspiratorial look.

Which of the following statements is not TRUE ?

(1) The grandmother had a library of her own.
(2) She would generally read two books a week.
(3) She had a taste for mystery stories.
(4) The books were not printed on shiny glazed paper.

2. **Read the passage given below and answer the question that follow by choosing the correct option out of the given one :**

In my grandmother's room, the books were lying down; she used to borrow them from a lending library and I never saw more than two at a time. These trashy works reminded me of New Year sweetmeats because their shiny flexible covers seemed to be cut out of glazed paper. Bright, white, almost new, they served as an excuse for petty mysteries.

Each Friday, my grandmother would get dressed to go out and say : 'I'm going to take them back;' when she returned, and had taken off her black hat and her veil, she would take them out of her muff and I would wonder mystified: 'Are they the same ones?' She used to 'cover' them carefully and then, having chosen one, she would settle herself by the window, in her winged armchair, put on her spectacles, sigh with pleasure and weariness, and lower her eyelids with a delicately voluptuous smile which I have since discovered on the lips of the Mona Lisa; my mother would fall silent, inviting me to keep quiet, and I would think about Mass, death or sleep: I invested myself with a holy silence. From time to time, Louise would give a chuckle; she would call to her daughter, point at a line and the two women would exchange a conspiratorial look.

Which of the following statements is FALSE ?

(1) The books looked beautiful but their contents were cheap.
(2) Every Friday grandmother would return books she did not like.
(3) She would get properly dressed before going to the market.
(4) The writer was not sure whether she had brought new books.

3. **Read the passage given below and answer the question that follow by choosing the correct option out of the given one :**

In my grandmother's room, the books were lying down; she used to borrow them from a lending library and I never saw more than two at a time. These trashy works reminded me of New Year sweetmeats because their shiny flexible covers seemed to be cut out of glazed paper. Bright, white, almost new, they served as an excuse for petty mysteries.

Each Friday, my grandmother would get dressed to go out and say : 'I'm going to take them back;' when she returned, and had taken off her black hat and her veil, she would take them out of her muff and I would wonder mystified: 'Are they the same ones?' She used to 'cover' them carefully and then, having chosen one, she would settle herself by the window, in her winged armchair, put on her spectacles, sigh with pleasure and weariness, and lower her eyelids with a delicately voluptuous smile which I have since discovered on the lips of the Mona Lisa; my mother would fall silent, inviting me to keep quiet, and I would think about Mass, death or sleep: I invested myself with a holy silence. From time to time, Louise would give a chuckle; she would call to her daughter, point at a line and the two women would exchange a conspiratorial look.

Study the following statements :

(A) Grandmother did not want anyone to know the titles of the books.

(B) She used to thoroughly enjoy her reading.

(1) (A) is right and (B) is wrong.

(2) (B) is right and (A) is wrong.

(3) Both (A) and (B) are right.

(4) Both (A) and (B) are wrong.

4. **Read the passage given below and answer the question that follow by choosing the correct option out of the given one :**

In my grandmother's room, the books were lying down; she used to borrow them from a lending library and I never saw more than two at a time. These trashy works reminded me of New Year sweetmeats because their shiny flexible covers seemed to be cut out of glazed paper. Bright, white, almost new, they served as an excuse for petty mysteries.

Each Friday, my grandmother would get dressed to go out and say : 'I'm going to take them back;' when she returned, and had taken off her black hat and her veil, she would take them out of her muff and I would wonder mystified: 'Are they the same ones?' She used to 'cover' them carefully and then, having chosen one, she would settle herself by the window, in her winged armchair, put on her spectacles, sigh with pleasure and weariness, and lower her eyelids with a delicately voluptuous smile which I have since discovered on the lips of the Mona Lisa; my mother would fall silent, inviting me to keep quiet, and I would think about Mass, death or sleep: I invested myself with a holy silence. From time to time, Louise would give a chuckle; she would call to her daughter, point at a line and the two women would exchange a conspiratorial look.

Study the following statements, which of them is not TRUE ?

(1) Grandmother did not like to be disturbed.

(2) Occasionally she would like to share her joy.

(3) The writer also enjoyed mystery stories.

(4) The point of mystery in the book would always excite grandmother.

5. **Read the passage given below and answer the question that follow by choosing the correct option out of the given one :**

In my grandmother's room, the books were lying down; she used to borrow them from a lending library and I never saw more than two at a time. These trashy works reminded me of New Year sweetmeats because their shiny flexible covers seemed to be cut out of glazed paper. Bright, white, almost new, they served as an excuse for petty mysteries.

Each Friday, my grandmother would get dressed to go out and say : 'I'm going to take them back;' when she returned, and had taken off her black hat and her veil, she would take them out of her muff and I would wonder mystified: 'Are they the same ones?' She used to 'cover' them carefully and then, having chosen one, she would settle herself by the window, in her winged armchair, put on her spectacles, sigh with pleasure and weariness, and lower her eyelids with a delicately voluptuous smile which I have since discovered on the lips of the Mona Lisa; my mother would fall silent, inviting me to keep quiet, and I would think about Mass, death or sleep: I invested myself with a holy silence. From time to time, Louise would give a chuckle; she would call to her daughter, point at a line and the two women would exchange a conspiratorial look.

'Voluptuous smile <u>which I have since discovered</u>.....'

The underlined is a/an _____ clause.

(1) Principal
(2) Noun
(3) Adjective
(4) Adverb

6. Ram was told to stay at home.

In which of the following options has the VOICE in the above sentence been correctly changed ?

(1) We had to tell Ram to stay at home.
(2) Ram stayed at home, we are told.
(3) We told Ram to stay at home.
(4) We had told Ram to stay at home.

7. The following sentence has an error in it. Choose the part which has the error.

Hardly had (1) I reached the (2) crowded platform than (3) the guard waved his flag. (4)

8. Fill in the blank in the following with the help of the given options. Which option do you choose ?

I could easily _____ the magician's trick.

(1) look into
(2) look for
(3) look through
(4) look about

9. The court showed clemency to the accused.
The underlined word means the same as :
(1) mercy
(2) reverence
(3) prudence
(4) hostility

10. Choose the option to complete the sentence given below.
I _____ hockey since I was 25.
(1) shall not have played
(2) would not play
(3) like to play
(4) have not played

1. 'जलपूर्ण' में समास है :
   (1) कर्मधारय
   (2) तत्पुरुष
   (3) द्वंद्व
   (4) द्विगु

2. निम्नलिखित में विसर्ग संधि वाला शब्द है :
   (1) दुरुपयोग
   (2) उच्चारण
   (3) स्वागत
   (4) उमेश

3. निम्नलिखित में कौन-सा विलोमार्थी शब्द -युग्म सही नहीं है?
   (1) आचार-अचार
   (2) इच्छा-अनिच्छा
   (3) क्रूर-अक्रूर
   (4) एड़ी-चोटी

4. निम्नलिखित में 'रात' का पर्यायवाची नहीं हैं :
   (1) यामिनी
   (2) विभावरी
   (3) निशाचरी
   (4) रजनी

5. निम्नलिखित में शुद्ध शब्द है :
   (1) विच्छेद
   (2) उप्सर्ग
   (3) उज्जवल
   (4) राजनीती

6. 'सबके साथ समान व्यवहार करने वाला' के लिए एक शब्द है :
   (1) सहपाठी
   (2) सहकर्मी
   (3) समदर्शी
   (4) सजातीय

7. निम्नलिखित में 'आँसू पोंछना' मुहावरे का सही अर्थ है :

(1) किसी की सहायता करना

(2) रोते को चुप करना

(3) सांत्वना देना

(4) सहयोग करना

8. **निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़िए और उसके आधार पर दिए गए प्रश्न का सटीक उत्तर दीजिए :**

देशी कारीगरी, चित्रकारी, संगीत आदि में नियम पालन के अभ्यास द्वारा प्राप्त इस साधन-सम्पन्नता पर ही इधर बहुत दिनों से अधिक ध्यान दिया जाने लगा था और मानव-हृदय पर इन मनोहारिणी कलाओं के प्रभाव का बहुत कम विचार होने लगा था। बहुत से पुराने मकानों की कारीगरी देखिए तो उनमें बहुत सा काम गिचपिच किया हुआ दिखाई देगा,ऐसे महीन बेल -बूटों की भिन्न-भिन्न पटरियाँ दीवारों में जमाई हुई मिलेंगी जो बिना आँख को पास ले जाकर सटाए स्पष्ट न जान पड़ेंगे। सारे मकान को एक बार में देखने से इन सबों का सम्मिलित प्रभाव दृष्टि और मन पर क्या पड़ेगा, इसका कुछ भी विचार बनानेवालों ने नहीं किया ,यह स्पष्ट दिखाई पड़ेगा।

ऐसे कामों में अभ्यास का तथा समय और श्रम के व्यय (या अपव्यय) का पूरा परिचय मिलता है, पर विचार और सहृदयतापूर्वक उनके उपयोग का बहुत कम।

गद्यांश के अनुसार निम्नलिखित में किस कला का मनोहारिणी कलाओं के अंतर्गत उल्लेख नहीं किया गया है?

(1) देशी कारीगरी

(2) चित्रकारी

(3) कलमकारी

(4) संगीत

9. **निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़िए और उसके आधार पर दिए गए प्रश्न का सटीक उत्तर दीजिए :**

देशी कारीगरी, चित्रकारी, संगीत आदि में नियम पालन के अभ्यास द्वारा प्राप्त इस साधन-सम्पन्नता पर ही इधर बहुत दिनों से अधिक ध्यान दिया जाने लगा था और मानव-हृदय पर इन मनोहारिणी कलाओं के प्रभाव का बहुत कम विचार होने लगा था। बहुत से पुराने मकानों की कारीगरी देखिए तो उनमें बहुत सा काम गिचपिच किया हुआ दिखाई देगा,ऐसे महीन बेल -बूटों की भिन्न-भिन्न पटरियाँ दीवारों में जमाई हुई मिलेंगी जो बिना आँख को पास ले जाकर सटाए स्पष्ट न जान पड़ेंगे। सारे मकान को एक बार में देखने से इन सबों का सम्मिलित प्रभाव दृष्टि और मन पर क्या पड़ेगा, इसका कुछ भी विचार बनानेवालों ने नहीं किया ,यह स्पष्ट दिखाई पड़ेगा।

ऐसे कामों में अभ्यास का तथा समय और श्रम के व्यय (या अपव्यय) का पूरा परिचय मिलता है, पर विचार और सहृदयतापूर्वक उनके उपयोग का बहुत कम।

गद्यांश के अनुसार मकान की दीवारों पर क्या बना हुआ था ?

(1) बेल-बूटों की भिन्न-भिन्न पटरियाँ

(2) वनस्पतियों के चित्र

(3) पशुओं की आकृतियाँ

(4) मानवी चित्र

10. **निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़िए और उसके आधार पर दिए गए प्रश्न का सटीक उत्तर दीजिए :**

देशी कारीगरी, चित्रकारी, संगीत आदि में नियम पालन के अभ्यास द्वारा प्राप्त इस साधन-सम्पन्नता पर ही इधर बहुत दिनों से अधिक ध्यान दिया जाने लगा था और मानव-हृदय पर इन मनोहारिणी कलाओं के प्रभाव का बहुत कम विचार होने लगा था। बहुत से पुराने मकानों की कारीगरी देखिए तो उनमें बहुत सा काम गिचपिच किया हुआ दिखाई देगा,ऐसे महीन बेल -बूटों की भिन्न-भिन्न पटरियाँ दीवारों में जमाई हुई मिलेंगी जो बिना आँख को पास ले जाकर सटाए स्पष्ट न जान पड़ेंगे। सारे मकान को एक बार में देखने से इन सबों का सम्मिलित प्रभाव दृष्टि और मन पर क्या पड़ेगा, इसका कुछ भी विचार बनानेवालों ने नहीं किया ,यह स्पष्ट दिखाई पड़ेगा।

ऐसे कामों में अभ्यास का तथा समय और श्रम के व्यय (या अपव्यय) का पूरा परिचय मिलता है, पर विचार और सहृदयतापूर्वक उनके उपयोग का बहुत कम।

मकानों पर कारीगरी करने वालों ने निम्नलिखित में से किसका विचार नहीं किया ?

(1) श्रम और व्यय

(2) अच्छी चित्रकारी

(3) दृष्टि और मन पर पड़ने वाले प्रभाव

(4) महीन पच्चीकारी