DELHI PUBLIC SCHOOL VISAKHAPATNAM
REVISION ASSIGNMENT
2025-26

Class: XII (SCIENCE) **Date of Submission: on or before 18.12.2025**

Subject: ENGLISH

Read the following passage carefully**:**

It is not merely a question of the knowledge that a man of culture will possess, but also of the habits and capabilities he will have acquired. In the course of education, the pupils' acquirements soon pass into habits; and this is perhaps the most important stage of the whole process. When a thought comes to have the same inevitability as a conditioned reflex, then the process of education is complete. But the habits that are acquired should not be too specific; they should be general habits of mind, such as those that lead to what is called "**intellectual curiosity.**"

Intellectual curiosity is the habit of mind that leads a man to want to know, for the mere sake of knowing, and not from any practical motive. The knowledge that is acquired solely for its utility is always limited, and often leads to a premature stagnation of the mind. The most valuable intellectual habits are those that lead to the perception of unexpected relations between apparently disconnected things. Such habits are the main source of the pleasure to be derived from intellectual pursuits, and they are also a source of general wisdom.

There are certain mental habits which stand in the way of intellectual curiosity. One of the most important of these is the habit of being satisfied with vague ideas. Most people are content to have ideas that are practically serviceable, without concerning themselves with their logical clarity. An idea is useful if it is not *too* much mistaken; but if we are to derive the pleasure of intellectual pursuit, we must pursue an idea to the point of clarity. A second obstacle is the habit of yielding to the temptation to take sides in a controversy. The man who is perpetually concerned with proving that one side is right and the other wrong will inevitably lose the judicial temper which is essential to the discovery of truth.

The highest intellectual value lies in the discovery of new truth. This discovery requires a certain mental detachment, a certain freedom from the influence of desire, fear, and conventional expectation. The man who is enslaved by these forces may become learned, but he will not become wise. Wisdom is the perception of how best to achieve the ends of life, and this requires a kind of knowledge that transcends mere utility. The development of intellectual curiosity is therefore not only the path to wisdom, but also the path to that freedom of mind which is the distinguishing mark of a truly educated man.

– Bertrand Russell (Abridged from The Function of a University)

Based on your understanding of the passage, answer the questions given below.

(a) Which of these is the meaning of the word ‘stagnation’ as used in the second paragraph?

i. development ii. growth iii. Renewal iv. lack of activity or progress

(b) Which of these best describes the author's primary attitude towards "knowledge acquired solely for its utility"?

i. supportive ii. Cautious iii. disinterested iv. admiring

(c) What does the author mean by the statement: "When a thought comes to have the same inevitability as a conditioned reflex, then the process of education is complete." (Para 1)

i. Education is complete when thinking becomes automatic and unconscious.

ii. True education establishes fundamental thoughts as ingrained habits.

iii. Education should prioritize physical reflexes over mental habits.

iv. The process of learning should be simple and mechanical.

(d) According to the author, what is the main source of pleasure in intellectual pursuits?

i. Acquiring practical knowledge for everyday utility.

ii. The development of habits that lead to intellectual curiosity.

iii. Recognizing surprising connections between unrelated concepts.

iv. Achieving complete freedom from desire and fear.

(e) Which of the following is the author’s perception of the habit of yielding to controversy?

i. It is essential for strengthening one's convictions.
ii. It leads to the judicial temper required for truth.
iii. It is an obstacle to discovering truth due to loss of objectivity.
iv. It contributes to intellectual curiosity and general wisdom.
(f) Select the response that best fits the following statement about the passage.
The author suggests that logical clarity is less important than practical serviceability for an idea to be useful.
Responses:
Yes - If the statement agrees with the information.
No - If the statement contradicts the information.
Not Given - If there is no information on this.
(g) Justify the importance of "**general habits of mind**" over "**specific acquirements**" in the context of the educational process described by the author. (2)
(h) State any one trait of the "**learned**" man that differentiates him from the "**wise**" man, and justify it with an example from the passage. (2)
(i) Explain the symbolic significance of the "**judicial temper**" in the context of discovering truth. (1)
(j) Based on the excerpt, which of these can be concluded about the author's view on Wisdom? (1)
i. It is the ability to acquire maximum knowledge.
ii. It is a form of knowledge that transcends practical utility.
iii. It is achieved by proving one side of a controversy right.
iv. It is identical to intellectual curiosity.

2. Attempt any one of the two, (a) and (b), in about 50 words. (4)
(a) You are Ankit/Ankita Sharma, the Head of the English Department, R.K. Public School. Write a notice for the school notice board informing the students of classes IX-XII about an Inter-School Debate Competition being organized. Mention the date, time, venue, and subject of the debate. Invent other necessary details.
OR
(b) You are S. Prakash/Priya, the Librarian of City Central Library. Write a notice for the library notice board informing members about the temporary closure of the library for two weeks due to necessary renovation and pest control work. Request cooperation and mention the last date for returning books. Invent necessary details.
3. Attempt any one of the two, (a) and (b). (4)
(a) You are Rohit/Rani Verma of 14, Ashoka Road, Nagpur. Your cousin's wedding is scheduled for next month. Design a formal invitation card (in not more than 50 words) to be sent to friends and relatives. Invent necessary details like the hosts' names, venue, and date.
OR
(b) You are Ms. Sunita Kapoor, a renowned environmentalist. You have received an invitation from the Eco Club of Green Valley School to be the keynote speaker at their Annual Environment Day celebration. Write a letter of refusal, expressing your inability to attend due to a prior commitment abroad.
4. Attempt any one of the two, (a) and (b). (5)
(a) You are Vishal/Vandana, residing at 25, Vasant Kunj, Delhi. Write a letter to the Editor of a national daily, highlighting the need for better maintenance of public parks and green spaces in urban areas. Emphasize their importance for the health and well-being of city residents. You may use the following cues. (120-150 words)

Importance	Lungs of the city — stress busters — safe zones for children and elders — community interaction
Current Issues	Neglected upkeep — broken benches/equipment — poor sanitation — encroachment by hawkers — lack of security
Suggestion	Community involvement — regular government inspection — dedicated park funds

OR

(b) Pioneer School, Sector 12, Chandigarh, requires a qualified and experienced TGT (Trained Graduate Teacher) for Science. You have seen their advertisement. Write an application in 120–150 words along with your resumé. You are Vikram/Veena Saini, residing at H-45, Phase 1, Mohali.

5. Attempt any one of the two, (a) and (b), in 120–150 words. (5)

(a) You are Karan/Kirti, a student of Class XII. You recently attended a one-day workshop on "Road Safety and Responsible Driving." Write a report on the event for your school newsletter, highlighting the key learnings and the importance of such workshops. Support your ideas with outline cues given below to craft your report.

- Date, venue, time
- Conducted by Traffic Police/NGO
- Interactive sessions (videos, demonstrations)
- Topics covered: Speed limits, distracted driving (phone use), helmet/seatbelt necessity
- Key message to be safe and responsible drivers

OR

(b) You are Anil/Anjali. Write an article for a local newspaper on the need for increased use of solar energy, titled "Harnessing the Sun: The Future of India's Energy Needs." Use the following cues, along with your own ideas, to compose this article.

Current Energy	Dependence on fossil fuels — pollution — resource depletion
Solar Advantages	Renewable — clean energy — reduces electricity bills — low maintenance — job creation
Challenges/Suggestion	High initial cost — need for government subsidies — community awareness

6. Reference to the context

"In the next room, the patient's thin chest was heaving as if he had no reliance upon himself. 'When the Emperor is so anxious about the General,' she murmured, 'how can we think of anything but saving him?' 'In all my life I have never heard of a case like this,' murmured the General. 'My dear General,' Sadao said, 'I would not think of my life. I think of yours.'"

(a) The 'patient' referred to here is:

i. Dr. Sadao's sick servant ii. The General iii. The American prisoner iv. Hana

(b) The General's anxiety is primarily for:

i. The well-being of his Emperor ii. The fate of the Japanese war effort iii. His own survival and health iv. Hana's safety

(c) Complete the given sentence appropriately:

Sadao's statement, "I would not think of my life. I think of yours," is an example of irony because

(d) The line "he had no reliance upon himself" reveals the General's:

i. Physical weakness ii. Emotional instability iii. Self-centered nature iv. Lack of faith in others

(e) What is the General's "astonishing" secret that Sadao learns during this conversation?

i. The General has been exiled ii. The General has a hidden illness that requires a sudden operation. iii. The General is planning a rebellion iv. The General knows Sadao has been hiding the prisoner.

(f) How does the General propose to have the problem of the prisoner solved?

i. By calling the police ii. By sending assassins to kill him iii. By arranging for the American to escape iv. By ignoring the whole incident

OR

B. "The two men, a writer and a journalist, who were not expected to be talking to each other, seemed like the crossing of the planet Earth and the planet Mars in the realm of Gemini Studios. They found themselves seated opposite each other in a hall meant for a public address, but they could not understand why. The writer was talking about Communism, and the listeners, who usually wore khaki, were confused and impatient."

(a) The 'two men' referred to here are:

i. K.S. Subbu and the narrator ii. The narrator and the office boy iii. Stephen Spender and the narrator iv. Stephen Spender and the narrator's colleague

(b) The comparison to the "crossing of the planet Earth and the planet Mars" highlights the contrast in:

i. Physical size ii. Intelligence and career iii. Backgrounds and ideological views iv. Social standing

(c) Complete the given sentence appropriately:
The listeners were 'confused and impatient' primarily because the speaker was discussing Communism and _____.
(d) What does the detail that the listeners "usually wore khaki" suggest about the general political alignment or background of the employees at Gemini Studios?
i. They were all members of the police force. ii. They supported Communism. iii. They were inclined towards Gandhism/a nationalist, anti-Communist ideology. iv. They were soldiers disguised as civilians.
(e) Why did the speaker's public address fail to engage the audience at Gemini Studios?
i. His English accent was too difficult to follow. ii. The audience was only interested in movies. iii. The speaker was too dull and monotonous. iv. The topic was alien and irrelevant to their interests.
(f) The phrase "realm of Gemini Studios" refers to:
i. The physical location of the studio ii. The creative environment iii. The established hierarchy iv. The political structure

Subject: MATHEMATICS

1 Determine whether the below relationis reflexive, symmetric and transitive:
Relation R in the set A = {1, 2, 3, 4, 5, 6} asR = {(x, y) : y is divisible by x}

2 Show that the relation R in the set Z of integers given by
R = {(a, b) : 2 divides a - b}is an equivalence relation.

3 Find the principal value of $\cos^{-1}\left(\frac{1}{2}\right)$.

4 Find the value of$\tan^{-1}(1) + \cos^{-1}\left(-\frac{1}{2}\right) + \sin^{-1}\left(-\frac{1}{2}\right)$

5 Let$A = \begin{bmatrix} 1 & -2 & 3 \\ -4 & 2 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 3 \\ 4 & 5 \\ -2 & 1 \end{bmatrix}$ Find AB and BA, andshow that $AB \neq BA$.

6 If$A = \begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix}$, then prove that $A^n = \begin{bmatrix} \cos n\theta & \sin n\theta \\ -\sin n\theta & \cos n\theta \end{bmatrix}$

7 If A =$\begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$ then verify that A adj A = | A| I. Also find A $^{-1}$

8 Differentiate x^{sinx} , x > 0 w.r.t. x.

9 If e^y (x + 1) = 1,show that $\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^2$

10 Find the points of local maxima or local minima and corresponding values of local maximum and local minimum values of each of the function. Also, find the points of inflection, if any:
f(x) = $(x + 1)(x + 2)^{\frac{1}{3}}, x \geq -2$.

11 Find the interval in function f(x) = x^2 + 2x - 5 is increasing or decreasing.

12 Find:$\int \frac{x^2+x+1}{(x+1)^2(x+2)}dx$

13 Find the area of the region bounded by the curve y= $\sqrt{1-x^2}$, line y = x and the positive x - axis.

14 Solve the differential equation:$x\sqrt{1-y^2}dx + y\sqrt{1-x^2}dy = 0$

15 Find the projection of the vector$\hat{\imath} + 3\hat{\jmath} + 7\hat{k}$ on the vector $7\hat{\imath} - \hat{\jmath} + 8\hat{k}$

16 If $\vec{a} = \hat{\imath} + 2\hat{\jmath} + 3\hat{k}$ and $\vec{b} = 2\hat{\imath} + 4\hat{\jmath} - 5\hat{k}$ represent two adjacent sides of a parallelogram, find unit vectors parallel to the diagonals of the parallelogram.

Subject: PHYSICS

A small candle 2.5 cm in size is placed 27 cm in front of concave mirror of radius of curvature 36 cm. At what distance from the mirror should a screen be placed in order to receive a sharp image? Describe the nature and size of the size of the image. If the candle is moved closer to the mirror, how would the screen have to be moved?

1. Double-convex lenses are to be manufactured from a glass of refractive index 1.55, with both faces of the same radius of curvature. What is the radius of curvature required if the focal length of the lens is to be 20 cm.

2. Monochromatic light of wavelength 589 nm is incident from air on a water surface. What are the wavelength, frequency and speed of (i) reflected (ii) refracted light ? Refractive index of water of water is 1.33.
3. What is the geometrical shape of the wave front in each of the following cases:
a. Light diverging from a point source.
b. Light emerging out of a convex lens when a point source is placed at its focus.
c. The portion of the wavefront of light from a distant star intercepted by the earth.
4. In a young's double-slit experiment, the slits are separated by 0.28 mm and the screen is placed 1.4 m away. The distance between the central bright fringe and the fourth bright fringe measured to be 1.2 cm. Determine the wavelength of light used in the experiment.
5. Find the : maximum frequency, and (b) minimum wavelength of X – rays produced by 30 kV electrons.
6. The work function of caesium metal is 2.14 eV. When light of frequency 6 x 10^{14}Hz is incident on the metal surface, photoemission of electrons occurs. What is the:
a. Maximum kinetic energy of the emitted electrons
b. Stopping potential, and
c. Maximum speed of the emitted photoelectrons?

Subject: CHEMISTRY

Ch-8 Aldehydes, Ketones and Carboxylic Acids

1. How are the following conversions carried out?
a. Ethylcyanide to ethanoic acid
b. Butan-1-ol to butanoic acid
c. Benzoic acid to m-bromobenzoic acid
2. Why is Carboxyl group in benzoic acid meta directing? Support your answer with two examples.
3. An organic acid A $C_5H_{10}O_2$ reacts with Br_2 in presence of phosphorus to give B. Compound B contains an asymmetric carbon atom and yields C on dehydrobromination. Compound C does not show geometrical isomerism and on decarboxylation gives an alkene D which ozonolysis gives E and F. Give structures of A to F.
4. An organic compound (A) on treatment with ethyl alcohol gives a carboxylic acid(B) and compound (C). Hydrolysis of (C) under acidified conditions gives (B) and (D). Oxidation of (D) with $KMnO_4$ also gives (B). (B)on heating with $Ca(OH)_2$ gives (E) having molecular formula C_3H_6O. (E) does not give tollens test and does not reduce Fehling's solution but forms a 2, 4-dinitro phenyl hydrazone. Identify A to E.
5. Arrange the following in the increasing order of their property indicated:
a) Ethanal, Propanone, Propanal, Butanone (reactivity towards nucleophilic addition)
b) 4-Nitrobenzoic acid, Benzoic acid, 3, 4-Dinitrobenzoic acid, 4-Methoxy benzoic acid (Acid strength)
c) Acetaldehyde, Acetone, Methyl tert butyl ketone (reactivity towards NH_2OH)
d) Ethanol, ethanoic acid, benzoic acid (boiling point)

Ch 9- Amines

1. When benzene reacts with CH_3Cl in presence of $ALCL_3$ to give A (C_7H_8). A reacts with 1 mole of CL_2 in presence of sun light forms B (C_7H_7CL). B on reaction with KCN forms C. C on hydrolysis gives D. C on reduction with Na and C_2H_5OH gives E. Identify A to E and explain the reactions.
2. Give reasons for the following:
i) Aniline is acetylated before nitration reaction.
ii) Pk_b of aniline is lower than m-nitroaniline.
iii) Primary amine on treatment with benzene sulphonyl chloride forms a product which is soluble in NaOH however secondary amine forms a product which is insoluble in NaOH.
iv) Aniline does not react with methyl chloride in presence of anhydrous $AlCl_3$ catalyst.
v) Ammonolysis of alkyl halides is not a good method to prepare primary amines.
vi) Although amine group is o-p directing in electrophilic substitution reactions yet aniline on nitration gives good yield of m-nitroaniline.
vii) Aromatic primary amines cannot be prepared by Gabriel Phthalimide synthesis.

viii) Aniline is a weaker base than alkyl amines.

3. An organic compound A having molecular formula C_3H_5N on hydrolysis gave another compound B. B on treatment with HNO_2 gave ethyl alcohol. B on warming with chloroform and alc potash gave an offensive smelling substance C. Identify A, B and C and write the reactions involved.
4. How are the following conversions carried out?

i) Ethanamine to N-ethyl ethanamide
ii) Chloroethane to methanamine
iii) Chloroethane to proan-1-amine
iv) Phenol to N-phenylethanamide
v) An alkyl halide to a quarternary ammonium salt
vi) Aniline to benzonitrile
vii) Nitrobenzene to benzoic acid
viii) Aniline to benzyl alcohol
ix) Benzene to m-bromoaniline
x) Nitrobenzene to phenol

5. Arrange the following in order of:

i) $C_6H_5NH_2$, $(C_2H_5)_2NH$, $(C_2H_5)_3N$, $C_2H_5NH_2$ (increasing order of Basic strength in water, decreasing order of basic strength in vapour phase)
ii) $C_6H_5NH_2$,$C_2H_5NH_2$,NH_3 (decreasing order of pk_b values
iii)$(C_2H_5)_2NH$, $C_2H_5NH_2$, $C_6H_5NH_2$ (increasing order of solubility in water)

Ch-10 Biomolecules

1. What is the essential difference between alpha glucose and beta glucose? Draw their pyranose ring structures.
2. How will you distinguish 1^0 and 2^0 hydroxyl groups present in glucose?
3. Which monosaccharide units are present in starch, cellulose and glycogen and which linkages link these units?
4. Define: Oligosacharide, Invert sugar, Peptide bond, Denaturation of protein, Zwitter ion
5. Why glucose does not give 2,4 DNP test?
6. Differentiate DNA and RNA.
7. What is the difference between (i) acidic amino acid and basic amino acid (ii) essential and non-essential amino acid? Give examples.
8. What are nucleotides? Write 4 functions of nucleotides in a cell.

Subject: BIOLOGY

1. Which of the following is NOT a function of the placenta?

a) Nutrient supply b) Waste removal
c) Hormone secretion d) Production of antibodies

2. In a dihybrid cross, the phenotypic ratio obtained is:

a) 9:3:3:1 b) 3:1 c) 1:2:1 d) 1:1

3. Which enzyme is used in PCR to withstand high temperatures?

a) DNA ligase b) Taq polymerase c) RNA polymerase d) Reverse transcriptase

4. Which of the following diseases is caused by a protozoan?

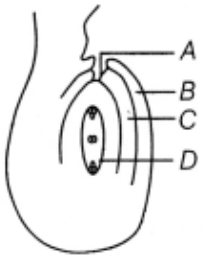
a) Tuberculosis b) Malaria c) Cholera d) Influenza

5. Which of the following is a biofertilizer?

a) Azotobacter b) Rhizobium c) Nostoc d) All of the above

6. Differentiate between innate immunity and acquired immunity.
7. What is the role of the enzyme ligase in genetic engineering?
8. Explain the significance of Okazaki fragments in DNA replication.
9. Why is human insulin produced using recombinant DNA technology preferred over animal insulin?
10. State two differences between mitosis and meiosis.
11. Describe the process of transcription in eukaryotes.
12. Explain the steps involved in the biogas production process.
13. Discuss the role of biological control agents in pest management with examples.
14. Explain the mechanism of sex determination in humans.

15. Identify and label the parts in the given anatropous ovule.



16. a) Taking one example each of habitat loss and fragmentation, explain how are the two responsible for biodiversity loss.
b) Explain two different ways of biodiversity conservation.
17. How is Rosie considered different from a normal cow? Explain.
18. Describe the structure and function of the human female reproductive system.
19. farmer notices that his crop yield has reduced despite using chemical fertilizers. An agricultural scientist suggests using biofertilizers like Rhizobium and Azospirillum.
a)Why might biofertilizers be more beneficial than chemical fertilizers?
b)Explain how Rhizobium helps in nitrogen fixation.
20. A patient is diagnosed with AIDS. The doctor explains that the virus attacks the immune system, making the patient vulnerable to infections.
a) Which virus causes AIDS?
b) How does this virus weaken the immune system?
c) Suggest two preventive measures to control the spread of AIDS.

Subject: ARTIFICIAL INTELLIGENCE

A. Short answer questions.
1. What is storytelling and why is it important?
2. "Stories create engaging experiences that transport the audience to another space and time". Justify. How does data storytelling enhance global networking?
[CBSE]
3. What are the steps involved in creating a good story?
4. What is the importance of a narrative in a story?
[CBSE]
5. Name the essential elements of data storytelling.
6. What is the difference between conflict and resolution?
7. Data can be persuasive, but stories are much more than that. Explain.
[CBSE]
8. How does data storytelling engage audiences?
9. Name some graphs that can be used for the following types of data.
a. Text data b. Data which is changing constantly over a period of time c. Stocks variation d. Mixed data
10. Describe Freytag's Pyramid and its application in data storytelling.
11. Discuss the ethical considerations in data storytelling.
12. Name any two factors that make storytelling powerful.
[CBSE]
Long answer questions.
1. Mention any four reasons due to which data storytelling has acquired a place of importance.
[CBSE]
2. Explain data visualisations on different types of data.
3. Consider the following graph. Mention the steps that can assist in finding compelling stories in the datasets.
[CBSE]

Subject : PHYSICAL EDUCATION

What are the methods to improve:
Strength
Speed
Endurance
Flexibility