

ENGLISH

General Instructions:

1. Read the newspaper daily with special emphasis on school based reports, notices, posters and articles. Pay attention to the language used.
2. Attempt the following questions in English Registers.
3. Date of submission is **18th June, 2024**.

SECTION A- WRITING SKILLS

Q. Read the following passages and the answer the questions as directed:

Passage 1: The Art of Reading Right

1. Reading Comprehension (RC, as it is normally called) is the most peculiar section in almost all scholastic, entrance and employment tests. The skills in RC make a lot of difference to one's chances of good grades/selection.
2. Most students find it difficult to tackle topics that are diverse from the field they are in or they are comfortable with. So one needs to develop a taste for even the most obscure and boring topic on this planet. For success in RC one should be able to understand. And even with an average speed one can succeed if one implements the strategies.
3. Broadly speaking, RC passages can be classified in a few categories. Fact based RC is the simplest form of RC. These types of passages have lot of information in the form of names, numbers etc. In this type of passages one should read very fast.
4. Don't try to memorize any facts, numbers or names etc. In fact there is no need to even remember them. Just make yourself familiar with the structure of the passage. Just see in which paragraph author is talking about what. Mark it. Then when you go to the questions, identify in which paragraph information regarding that question is mentioned. Go to that paragraph, read the numbers, names etc. and mark the answer.
5. Inference based RC is the toughest form of RC. Here the passage is fairly tough to understand. This includes passages on topics like Religion, Spirituality, Philosophy, etc. Most of the students will be comfortable attempting these passages at least in RC. The reading speed is fairly slow in this type of passages. The way to master this type of passages is to read them again and again while practising.
6. Topic based RC includes passages on any particular topic like economics, astrology, medical science, etc. Generally what makes -these passages tough is usage of technical terms. If a topic is new to us then presence of technical term scares us even if they are defined in the passage. For success in this type of passages we need to have a fan-understanding of the definition of the term if it is defined in the passage. Read that definition twice if you need to. But don't worry about technical terms if they are not defined in the passage. Assume them to be non-existent

and proceed. Key principle in these passages is that don't go to the next line unless the previous line is clear.

7. Reading passage first and then questions is the most popular strategy for RC. While answering the question you may come back to the passage to find answer as you have just read the passage initially and not crammed it. But you should not come back for each and every question. If you come back for majority of questions then you haven't read the passage properly. The key to success for this strategy is that you should understand the passage very well. We will suggest students to follow this technique from the beginning and work upon this.
8. Reading questions first and then passage is the strategy followed by a few students. They just look at the questions and not options. The objective is that after seeing the questions when you read the passage then you read only that part carefully where the answer is given. The flaw with this is that you will not be able to remember all the questions. Besides this, this strategy fails when there are questions that require understanding of the passage.

A. Answer the following questions by choosing the most appropriate option:

1. Most students find Reading Comprehension difficult because.....
 - (a) the language is tough
 - (b) the vocabulary is difficult
 - (c) the style is too involved
 - (d) the topics are unrelated to their interest
2. Fact based RC is the easiest because.....
 - (a) it is written in simple language
 - (b) there are no allusions
 - (c) it contains information
 - (d) it can be memorised easily
3. For answering a question on RC, one should.....
 - (a) memorise the facts, figures, etc.
 - (b) mark what the author is talking about in the para
 - (c) mark the essential details of the passage
 - (d) remember the names, numbers, etc.
4. Topic based RC is tough as.....
 - (a) it contains technical terms
 - (b) it is based on different topics
 - (c) it demands instant understanding
 - (d) one can't read them fast enough
5. Careful reading of the passage is essential for.....
 - (a) answering difficult questions
 - (b) saving time and effort
 - (c) proper understanding and answering correctly
 - (d) selective identification of relevant parts
6. The word 'diverse' in para 2 means.....
 - (a) similar
 - (b) same

- (c) variety
- (d) different

B. Answer the following questions in brief:

7. What should one do for finding the right answers?
8. Why is topic based R C tough?
9. Which step is considered more essential for finding right answers? Why?
10. What is the most popular strategy for solving Reading Comprehension (RC)?
11. Find the words similar in the meaning from passage.
 - (a) Different (para 2)
 - (b) Accept as true (para 6)

Passage 2: Great Indian digital divide

1. The revolution in information technology (IT), far from helping India to leapfrog to a post-industrial society, threatens to rupture the social fabric by enriching a few at the cost of many.
2. In a very short time and quite unexpectedly, India has risen to considerable eminence in the world of information technology. This year, software products are expected to account for \$ 5.7 billion in exports and will account for a quarter of the growth in the economy, which is expected to grow nearly seven per cent. Within eight years, predicts a recent study by McKinsey & Co. and the National Association of Software & Service Companies (Nasscom), India's annual IT exports could hit \$ 50 billion about 33 per cent of global software exports. Such a surge is expected to generate 2.2 million jobs—and push our growth rate near the double digits that many East Asian Tigers enjoyed before the 1997 crash.
3. For the rapidly growing middle class, which was desperate to make its presence felt but remained mired in the great Indian outback of the global economy and regretfully watched the industrial revolution pass it by, this is the moment they have been waiting for. When countries like Japan and Germany, the objects of Indian admiration, should come knocking on our doors to solicit our talent to invigorate their industry, it is indeed redemption of sorts. And IT is the cause of it all.
4. The big question is, will IT do an encore for India as a nation, and not just for a wafer thin percentage of IT-literate Indians, mostly the poster boys of the IITs?
5. IT has, as yet, failed to touch the lives of the average citizen and India is nowhere close to being a knowledge economy or society. As per the International Data Corporation (IDC), in a survey of 55 countries, India ranks 54th on its Information Society Index.
6. The fact is, it is a straightforward reflection of the deep inequality of our education system which breeds a few 'geniuses' at the cost of the entire nation. A study by former director of the National Centre for Software Technology, R. Narasimhan, points out that nowhere is the digital divide more glaring than in IT education. The report warns that India's 'obsession' with the software industry and its exports orientation is leading to the churning out of unemployable students on one hand and bright whiz-kids on the other. While the

latter are lured away by overseas employers, the former remain unemployable. Narasimhan cautions against the 'hype' associated with the phenomenal growth of India's software industry defying rational explanations and built up into a 'mystique of sort' which breeds false hopes.

7. India's software industry is a poor employment generator. In the mid-Nineties, some 20,000 people were actively employed in software export services. In contrast, there were three million registered unemployed graduates in the Nineties. While the 'Narasimhan study doesn't mention number of hobs lost due to computerisation, one could comfortably add a million to the number.

A. Answer the following questions by choosing the most appropriate option:

1. The revolution in IT threatens to break apart the social fabric cause.....
 - (a) the stocks of software companies have risen at BSE
 - (b) it has helped India to rise beyond the industrial society
 - (c) it is enriching a few at the cost of many
 - (d) it has created a gulf between the rural and urban sector
2. Growth in export of Indian software products and national economy have been achieved because of.....
 - (a) global recession
 - (b) liberalised economy
 - (c) public private cooperation
 - (d) eminence of Information Technology
3. It is a time of pride for the middle classes in India because.....
 - (a) developed industrial nations will require Indian software professionals to invigorate their industry
 - (b) they are desperate to make their presence felt
 - (c) they have remained stuck in the mud of global economy
 - (d) they have regretfully watched the industrial revolution pass by them
4. The digital divide is clearly visible in IT revolution because.....
 - (a) it has improved a lot of average Indian citizen
 - (b) it has benefitted only the products of IITs or some IT-literates
 - (c) it has made India a knowledge economy or society
 - (d) non-IT trained students run the IT institutes
5. Narasimhan's report cautions against 'hype' around IT software industry because.....
 - (a) it is rational
 - (b) it breeds false hopes
 - (c) all look for foreign assignments
 - (d) it attracts even the dullards
6. The word 'redemption' in para 3 means.....
 - (a) recoupment
 - (b) recumbent

- (c) recovery
- (d) redeeming

B. Answer the following questions in brief:

7. Why is the digital divide clearly visible in IT revolution?
8. Why is IT not beneficial for average Indians?
9. What does Narasimhan's report highlight about IT software industry?
10. How is IT revolution lucrative for the middle classes in India?
11. Find the words from the passage which are similar in meaning.
 - (a) Recovery (para 3)
 - (b) Very easily seen (para 6)

Q3. It is believed that empowering women is a major step towards empowering a nation. Write an article of about 200 words on the given theme.

Q4. You are Aman/Aditi studying in Bharati Public School, Lucknow. The road leading to your school is very congested and full of potholes. Students and parents are often caught in a traffic jam. In spite of several representations, the government has not done anything to improve the condition of the road. Write a letter to the Editor of The Times of India, drawing the attention of the government to this problem.

Q5. The Tourism Department (Govt. of Uttarakhand) has launched an ambitious plan to popularise adventure sports and eco-tourism in the state. Draft a poster in not more than 50 words to be displayed at important public places /publication in newspapers.

SECTION B- GRAMMAR

i. Fill in the blanks using the correct form of the words given in the brackets.

With India set to a)_____ (take over/take on/undertake/take up) the presidency of the G20 at the end of this year, the platform of the world's 20 largest economies b)_____ (though/although/that/through) riven by Russia's war in Ukraine c)_____ (can/shall/should/could) still play a key role in d)_____ (finding/finds/found/founded) solutions, as demonstrated during the initial stages of the Covid-19 pandemic. India's commitment to stand e)_____ (with/by/on/in) developing nations on issues such as debt, food, energy, security and climate action during its G20 presidency is a welcome assertion.

ii. The following passage has not been edited. There is one error in each line against which a blank has been given. Write the incorrect word and the correction against the correct blank.

	Error	Correction
Paper were first made by the Egyptians	_____	_____
From the plant names papyrus. For	_____	_____
the long time, papyrus was used extensively	_____	_____
as writing material before a Chinese	_____	_____

perfected the processes. Demand of paper _____

growing with the advent of books worldwide. _____

SECTION C- LITERATURE

Write each of the following questions in 100-120 words.

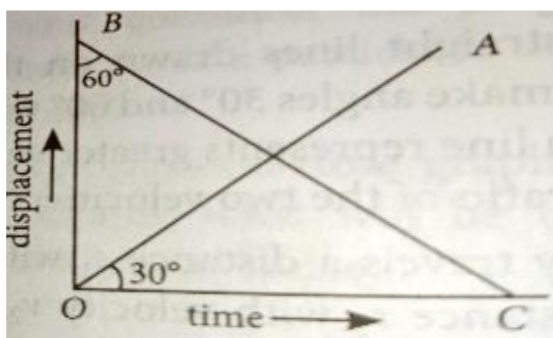
1. Explain how does the setting of the story “The Portrait of a Lady” affects the relationship between the grandmother and the author.
2. Discuss the values highlighted in the story “The Portrait of a Lady”.
3. “A Photograph” is a dysphoric poem which captures the different moods of the poet. Discuss
4. Human life is short-lived in contrast to nature. Comment on the statement in the light of the poem “A Photograph”.
5. Can the act of stealing be ever justified? Give your views in the context of reading of “The Summer of the Beautiful White Horse”

PHYSICS

Date of submission: 19th June, 2024

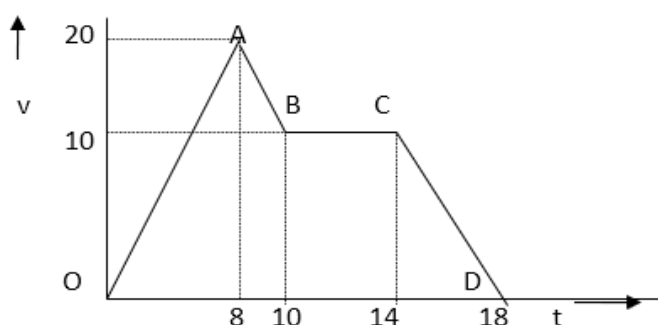
Complete the following assignment in your Physics register.

1. Displacement–time graph of two bodies P and Q is represented by lines OA and BC respectively. Find the ratio of velocities of P and Q.



2. The motion of a particle is described by the equation:
 $X = 3(t - 2) + 5(t - 2)^2$ At what time, is the particle at origin? Find the acceleration of the particle at $t = 2s$.
3. A body is thrown up with an initial velocity u . It returns to its initial position after time t . Draw its (i) position – time graph (ii) velocity – time graph. (iii) acceleration – time graph.
4. Find the ratio of the distance moved by a freely falling body from rest in its 4th second and 5th second of its journey.
5. A car driver driving at 36km/h spots a child on the road 55m ahead. He immediately applies brakes so as to stop within 5m of the child. Calculate the retardation & time taken to stop.

6. A stone is released from a balloon from a height of 300m. How long will the stone take to reach the ground if the balloon is ascending with a velocity of 5m/s?
7. A body covers 20m in the 7th sec & 24m in the 9th sec. How much shall it cover in 15th sec?
8. A stone thrown vertically upward from the top of a tower 85m high reaches ground in 5s. Find the greatest height above ground, velocity with which it reaches ground & the time taken to reach the maximum height ($g = 10\text{m/s}^2$).
9. A stone is dropped freely from rest from the top of a tower of height 80m. At the same time another stone is projected vertically upward from the foot of a tower with a velocity of 40m/s. After what time would they meet.
10. The v-t graph for a particle is shown by the curve OABCD. Calculate the distance covered between (a) $t = 0$ to $t = 18\text{s}$ (b) $t = 2$ to $t = 12\text{s}$ c) Maximum value of acceleration.



11. The magnitude of resultant of two unit vectors is 1. Find (i) angle between the unit vectors. (ii) magnitude of the difference of the unit vectors.
12. If the magnitude of two equal vectors is equal to the magnitude of the subtraction of the vectors, then find the angle between the vectors.
13. A small boat travels towards West at 18 km/h. Wind blows at $18\sqrt{2}\text{km/h}$ towards North-East. Find the resultant velocity of the boat.
14. A force of 50 N acts on an object such that its horizontal component is 28N. What is its vertical component? What angle does this force makes with the X- axis?
15. If $\mathbf{A} \cdot \mathbf{B}$ is equal to the magnitude to $\mathbf{A} \times \mathbf{B}$, then find the angle between \mathbf{A} and \mathbf{B} .

CHEMISTRY

Date of submission: 20th June, 2024

Complete the following assignment in your Chemistry register.

1. What is the molality of a 1 L solution of H_2SO_4 which is 46% wt/vol? (Density of solution = 1.40 g/cm^3)
2. Calculate the molarity of pure water if its density at room temperature is 1.0 g/cm^3 .
3. Calculate the molarity of solution obtained by dissolving 0.100 g of Na_2CO_3 in 250 cm^3 of solution.
4. Calculate the molality of solution of $\text{C}_2\text{H}_5\text{OH}$ in water in which the mole fraction of $\text{C}_2\text{H}_5\text{OH}$ is 0.050.
5. Calculate the percentage composition of zinc, phosphorus and oxygen in zinc phosphate, $\text{Zn}_3(\text{PO}_4)_2$

6. What is the molecular formula of a compound that contains 47.4% S and 52.6% Cl? The molecular mass of the compound as determined experimentally is 135 g mol^{-1} .
7. Mass percent composition of a substance is 24.7% Ca, 1.24% H, 14.8% C and 59.3% O. Calculate the molecular formula of the substance if its molecular mass is 162 u.
8. A compound of carbon, hydrogen and nitrogen contains elements in the ratio 9: 1: 3.5. Molecular mass of substance is 108u. Calculate the following:
 - (i) Empirical formula
 - (ii) Molecular formula
9. A carbon compound containing only carbon and oxygen has an approximate molecular mass of 290u. On analysis it is found to contain 50% by mass of each element. What is the molecular formula of the compound?
10. Calculate the number of molecules in 4.25 g of NH_3 .
11. Which has maximum molecules?
 - (i) 7 gm N_2
 - (ii) 2 gm H_2
 - (iii) 16 gm NO_2
 - (iv) 16 gm O_2
12. A compound has following composition
 - (i) Sodium = 14.13%
 - (ii) Sulphur = 9.97%
 - (iii) Oxygen = 69.50%
 - (iv) Hydrogen = 6.22%.

Calculate the molecular formula of the compound assuming that whole hydrogen in compound is present as water of crystallisation. Molecular mass of compound is 322u.
13. A sample of phosphorus has 0.5 moles of P_4 molecules
 - (i) How many P_4 molecules are there?
 - (ii) How many P atoms are there?
 - (iii) How many moles of P atoms are there in the sample?
 - (iv) What is the mass of the sample?
14. Calculate the number of atoms in each of the following:
 - (i) 4 mole atoms of nitrogen.
 - (ii) 0.4 mole molecules of nitrogen.

BIOLOGY

Date of submission: 21st June, 2024

1. You are required to make mind maps on the following topics given below on an A3 sheet along with supporting diagrams/pictures.
 - (a) Biological classification
 - (b) Eukaryotic cell
 - (c) Taxonomical Hierarchy
2. Complete the practical file and write the following experiments:
 - (a) Mitosis in onion root tip cells and animals' cells (grasshopper) from permanent slides.
 - (b) Specimens/slides/models and identification with reasons - Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.

- (c) Virtual specimens/slides/models and identifying features of - Amoeba, Hydra, liver fluke, Ascaris, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.

3. Prepare a 3D working model on the following topics.

(a) Photosynthesis Model

Photosynthesis Model: Build a model of a plant cell or chloroplast to demonstrate the process of photosynthesis. Include structures like chlorophyll, thylakoids, and stroma. Show how light energy is converted into chemical energy (ATP and glucose) and oxygen is released as a by-product.

(b) Cell Membrane Permeability Model

Create a model to illustrate cell membrane permeability and transport mechanisms.

Use a semi-permeable membrane and materials to represent molecules like water, ions, and proteins. Show how diffusion, osmosis, and active transport occur across the membrane.

4. Do the following assignment in your Biology register:

1. Are the different types of plastids interchangeable? If yes, give examples where they are getting converted from one type to another.

2. The genomic content of the nucleus is constant for a given species whereas the extra chromosomal DNA is found to be variable among the members of a population.

Explain.

3. What is referred to as a satellite chromosome?

4. Suppose you accidentally find an old preserved permanent slide without a label. In your effort to identify it, you place the slide under a microscope and observe the following features: -

a. Unicellular

b. Well defined nucleus

c. Biflagellate—one flagellum lying longitudinally and the other transversely.

What would you identify it as? Can you name the kingdom it belongs to?

5. Define a taxon. What is meant by taxonomic hierarchy. Give a flow diagram from the lowest to highest category for a plant and an animal. What happens to the number of individuals and number of shared characters as we go up the taxonomic hierarchy?

6. A virus is considered as a living organism and an obligate parasite when inside a host cell. But viruses are not classified along with bacteria or fungi. What are the characteristics of viruses that are similar to non-living objects?

7. With respect to the fungal sexual cycle, choose the correct sequence of events and explain.

a. Karyogamy, Plasmogamy and Meiosis

b. Meiosis, Plasmogamy and Karyogamy

c. Plasmogamy, Karyogamy and Meiosis

d. Meiosis, Karyogamy and Plasmogamy

8. Apart from chlorophyll, algae have several other pigments in their chloroplast. What pigments are found in blue-green, red and brown algae that are responsible for their characteristic colours?

9. Linnaeus is considered the Father of Taxonomy. Name two other botanists known for their contribution to the field of plant taxonomy?

10. *Brassica campestris* Linn a. Give the common name of the plant. b. What do the first two parts of the name denote? c. Why are they written in italics? d. What is the meaning of Linn written at the end of the name?

MATHEMATICS

Date of submission: 22nd June, 2024

Complete the following assignment in your Mathematics Register

Q1. State which of the following statements are true and which are false. Justify your answer.

- (i) $35 \in \{x | x \text{ has exactly four positive factors}\}$.
- (ii) $128 \in \{y | \text{the sum of all the positive factors of } y \text{ is } 2y\}$
- (iii) $3 \notin \{x | x^4 - 5x^3 + 2x^2 - 112x + 6 = 0\}$

Q2. Given $L = \{1, 2, 3, 4\}$, $M = \{3, 4, 5, 6\}$ and $N = \{1, 3, 5\}$. Verify that $L - (M \cap N) = (L - M) \cap (L - N)$

Q3. If A and B are subsets of the universal set U, then show that

- (i) $A \subset A \cup B$
- (ii) $A \subset B \iff A \cup B = B$
- (iii) $(A \cap B) \subset A$

Q4. Let the function $f(x) = x^2$ for all $x \in X$, where $X = \{-2, -1, 0, 1, 2, 3\}$, $Y = \{4, 1, 0, 9\}$. Define $f: X \rightarrow Y$. Express the relation f in roster form. Mention if f is a function.

Q5. For all sets A and B, prove that $(A \cup B) - B = A - B$.

Q6. Two finite sets have m and n elements. The number of subsets of the first set is 112 more than that of the second set. Find the value of m and n.

Q7. A, B and C are subsets of Universal Set If $A = \{2, 4, 6, 8, 12, 20\}$, $B = \{3, 6, 9, 12, 15\}$, $C = \{5, 10, 15, 20\}$ and U is the set of all whole numbers, draw a Venn diagram showing the relation of U, A, B and C.

Q8. Calculate the domain and range of $f(x) = |2x - 3| - 3$.

Q9. Let $f: x \rightarrow 5x^2 + 2$, $x \in \mathbb{R}$ define the function f. Find the image of 3 under f.

Q10. Draw the graph of $f(x) = |x - 2|$, $x \in \mathbb{R}$. What are the domain and range of $f(x) = |x - 2|$.

PSYCHOLOGY

Date of submission: 25th June 2024

1. An autobiography is story of your life. Your holiday homework is to write your autobiography. You may write it in a conversation or story style. Share your photographs, family pictures etc. Feel free to write about any significant event that you have

experienced and what you learnt from it. (use A4 size coloured paper may use coloured pens / sketch pens etc.)

2. Write an essay upon Positive Psychology (300 words).

3. Complete NCERT based question answers of chapter 1.

COMPUTER SCIENCE

Date of submission: 26th June 2024

Develop an app- original or use an app to demonstrate the use of AR in education.

GENERAL INSTRUCTIONS:

- Code for the following programs is to be printed on A4 size sheets along with the snapshot of the output.
- Font for the Code: Courier New: Font size – 12
- Only one program and its output to be printed on one A4 size sheet

1.	Write a program to print your name and class.
2.	Write a program to input two numbers and find its - Sum - Difference - Product
3.	Write a program to input two integers and print - Quotient - Remainder - Floor of the quotient
4.	Write a program to input two numbers and print the larger of the two
5.	Write a program to input a string and print all vowels from the string.
6.	Write a program to input a list and print the sum of numbers ending with 3 in the list.

PHYSICAL EDUCATION

Date of submission: 27th June 2024

I. To be done in Practical File

- Practical-1: Labelled diagram of 400 m Track & Field with computations.
- Practical-2: Describe Changing Trends in Sports & Games in terms of changes in Playing surface, Wearable gears, Equipment, Technological advancements.
- Practical-3: Labelled diagram of field & equipment of any one IOA recognised Sport/Game of choice.

II. Play any sport during summer vacation and note the changes in body (Muscular system) and write in your practical file.

III. Visit any sports complex nearby and write about the game specific changes in infrastructure of your specific game in your practical file.

IV. Complete the following assignment in your Register

1. Define Physical Education.
2. What are the objectives of Physical Education?
3. How Physical Education develop neuro-muscular coordination?

4. How can Physical Education contribute in moral and character building?
5. How does Physical Education contribute to an individual's mental development?
6. What are advantages of using technology in sports?
7. What are the career options an individual has after completion of professional course in Physical Education?
8. What is Khelo India Programme?
9. What is the need of sports competition in school? Discuss in details.
10. Apart from a professional degree in Physical Education, what other key skills are required for opting for career other than teaching?