

**COMPILED HOLIDAY HOMEWORK**  
**CLASS - 12 (2022- 23)**

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**CHEMISTRY :**

**PREPARATION OF INVESTIGATORY PROJECT AND PRACTICAL FILE FOR CHEMISTRY PRACTICALS**

(a) Investigatory project : Prepare the project based on the topics allotted systematically with observation and result (follow all the instructions as directed )

(b) Practical file : Write all the experiment of volumetric analysis and salt analysis .

**PHYSICS :**

Two separate files are to made in Physics.

1. Experiment file ( Thick file)

2. Activity file ( Thin file)

☞ Kindly complete the activity file from the comprehensive lab manual as it is without mentioning the date.

☞ No Observation table is to be made for the activity.

☞ On the top of the page in the centre Activity 1, Activity 2, and so on has to be written, no matter whatever is the number mentioned in the lab manual.

\*Also one project file has to be made other than experiment and activities are given above.

**LIST OF TOPICS FOR PHYSICS PROJECT**

1. Gauss's Theorem
2. Equipotential Surfaces
3. Capacitors
4. Internal resistance
5. Wheatstone Bridge
6. Moving Coil Galvanometer
7. Earth's Magnetism
8. Magnetic properties of materials
9. Electromagnetic Induction
10. A C Generator
11. Transformer
12. Electromagnetic Spectrum
13. Optical Fibres
14. Optical Instruments
15. Huygen's Principle
16. Photoelectric effect
17. Semiconductor diodes

All the children are requested to select the topic of their choice out of the topics given above. **Not more than 3 students can choose the same topic. So, after choosing the topic, children are requested to inform me in my personal desk to get the approval. The selection of the topics should be done before 30th April. Once you get the approval, you can select the contents to be written.**

**Project should be prepared in A4 size ruled sheets.** Project should be prepared under the following headings:

\* Cover Page

\* Certificate

\* Acknowledgement

\* Index

\* Introduction to the topic

\* Principle

\*Theory

\* Applications

\* Advantages

\* Disadvantages

- Circuit diagrams/ Pictures related to the relevant topic should be added to the project.
- The whole project work should be compiled within 15 pages.
- Cover Page, Acknowledgement and Certificate should be printed.
- Rest all the pages should be hand written

### COVER PAGE

Cover Page should contain the following informations:

- ❖ Name of school
- ❖ Session
- ❖ Monogram of the School
- ❖ Physics Project
- ❖ Topic of the Project
- ❖ Submitted to : Mrs. RENUKA SURESH
- ❖ Submitted by : (Your name)
- ❖ Class and Section
- ❖ Board Roll No (leave it blank. Once you get it , you will enter)

**Note : Topic related background can be added on to the cover page in light shade**

### CERTIFICATE

After the contents of the certificate, following informations are necessary in the given format:

External's Signature

Internal's Signature

Principal's Signature

School Seal

**Note: All of you need to submit your project on 27<sup>th</sup> June 2022 in a transparent stripped file. Once it is checked and approved it would be returned back. Then it has to be spiral binded after correcting the given remarks.**

**BIOLOGY :**

- a) Investigatory project : Prepare the investigatory project ( as per the topic allotted to you).
- b) Start collecting the matter related to MINI PROJECT ON RTPCR.

**PHYSICAL EDUCATION :****Prepare Unit 1****Management of sporting Events.****1) Various committees & their responsibilities.**

Pre, During & post.

**2) Fixtures and its procedure.****3) Knockout tournament****5) League or Round Robin tournament.****6) Draw the fixture of Knockout tournament.**

Teams: 20, 17, 15, 21, 25

**7) Draw the fixture of League tournament.**

Cyclic method.

Teams : 7, 5, 6, 8, 9

**8) League tournament**

Staircase method.

Teams : 8, 6, 5, 9, 7.

Practical:

**1) Practice of physical fitness Test.****2) skills practice (According to your game)****BUSINESS STUDIES :**

- (A) The following list of project topics have been given to you by CBSE. You need to select any one topic out of four and finalize.
- (B) Principles of Management
  - (C) Business Environment
  - (D) Marketing Management
  - (E) Stock Exchange

Each student will prepare and submit his/her project and are required to fulfill the following essentials:-

1. The project will be of 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence
  - a. Cover page should include the title of the project student information School and year
  - b. List of contents
  - c. Acknowledgement and preface
  - d. Introduction
  - e. Topic with suitable heading
  - f. Activities done during the project
  - g. Observation and findings of the visit
  - h. Conclusions( summarised suggestions or findings, future scope of study.)
  - i. Photographs
  - j. Bibliography

The authority letter from the school for the topic Principles of Management is to be collected, if you plan for industrial visit as discussed in the class.

(B) Chapter 1 Nature and significance of management has to be studied with all important key points.

#### COMPUTER SCIENCE :

Holiday Homework – Subject :- Computer Science (083) Class :- XII

Solve 5 HOTS questions + 2 programs in your self-study register, from Class XI CS Syllabus, covering the following topics, for 40 days:-

1. If-elif-else construct
2. While loop
3. for item in collection construct
4. for <var> in range construct
5. lists
6. tuples
7. dictionary
8. strings
9. functions
10. python user libraries

Total no.of questions expected :- 5+2 = 7 questions per day => 7\*40 = 280 questions.

#### ACCOUNTANCY:

##### PREPARATION OF PRACTICAL FILE FOR ACCOUNTANCY PRACTICALS

- a) **Comprehensive project** : Practical question on accounting process  
(Need to take 30 transactions assuming a business organization and preparation of journal, ledger, trial balance and financial statements.
- b) **Ratio Analysis** : Analysis of financial statements of any registered company  
(Students need to collect the annual report of any company for vertical balance sheet and profit and loss A/c and analysis there on)
- c) **Cash flow statement** : Preparation of cash flow statement  
(Students need to use annual report of the company especially the balance sheet and profit and loss A/c of the company as a reference for making the cash flow statement)

ग्रीष्मावकाश गृहकार्य 2022-23

विषय – हिन्दी (आधार)

कक्षा – 12

निम्नलिखित में से किसी एक विषय पर लगभग 1500 – 2000 शब्दों में परियोजना (प्रोजेक्ट) तैयार कीजिये –

1. हिन्दी कविता में प्रकृति चित्रण

2. भारतीय ग्रामीण का जीवन
3. सामाजिक अंधविश्वास और हम
4. जल बनाम अमृत
5. भारतीय संस्कृति में नदियों का महत्व
6. हिन्दी साहित्य की प्रेरक कहानियाँ
7. सामाजिक जीवन में मीडिया की भूमिका
8. संविधान निर्माण में अम्बेडकर जी का योगदान
9. महादेवी वर्मा का व्यक्तित्व एवं कृतित्व
10. विज्ञापन की दुनिया
11. हिन्दी कविता का भक्तिकाल / रीतिकाल / आधुनिक काल
12. तुलसीदास जी का साहित्य

## **परियोजना (प्रोजेक्ट) कार्य करते समय निम्नलिखित प्रारूप का पालन करें –**

1. मुखपृष्ठ
2. आभार
3. विषयसूची
4. उद्देश्य
5. परिकल्पना (अवधारणा)
6. प्रक्रिया
7. विषय का विस्तार
8. अध्ययन का परिणाम
9. अध्ययन की सीमाएँ
10. सन्दर्भ-सूची

## **सामान्य निर्देश –**

1. परियोजना कार्य को सृजनात्मक, आकर्षक एवं अर्थपूर्ण बनाएँ।

2. आवश्यकतानुसार चित्रों, विज्ञापनों, ग्राफ एवं समाचार-पत्र की कतरनें आदि का उपयोग अवश्य करें।
3. कागज़ पर एक ही तरफ (Right-side) लिखें, दूसरी तरफ (Left-side) चित्र आदि का प्रयोग करें।
4. परियोजना – कार्य हेतु A4 साइज़ सादे कागज़ का ही इस्तेमाल करें।
5. परियोजना-कार्य 27 जून 2022 तक अनिवार्य रूप से जमा करें।

## ENGLISH CORE-XII

### READING COMPREHENSION

#### PART A

I. Multiple Choice questions based on one unseen case-based factual passage with verbal/visual inputs like statistical data, charts, newspaper report etc. Ten out of eleven questions to be done.

#### PASSAGE 1

Read the passage carefully:

1. When plastic waste is burnt, a complex weave of toxic chemicals is released. Breaking down Poly Vinyl Chloride, (PVC) is used for packaging, toys and coating electrical wires. It produces dioxin, an organochlorine which belongs to the family of Persistent Organic Pollutants (POPs). A recent Dioxin Assessment Report brought out by the United States Environment Protection Agency (USEPA) says the risk of getting cancer from dioxin is ten times higher than reported by the agency in 1994.

2. Yet the Delhi government is giving the green signal to a gasification project which will convert garbage into energy without removing plastic waste. Former transport minister Rajendra Gupta, the promoter of this project, says this is not necessary. He claims no air pollution will be caused and that the ash produced can be used as manure. An earlier waste-to-energy project set-up in Timarpur failed. The new one, built with Australian assistance, will cost 200 crore. It will generate 25 megawatts of power and gobble 1,000 tonnes of garbage every day.

3. "Technologies like gasification are a form of incineration," says Madhumita Dutta, central coordinator with Toxics Link, New Delhi. Incineration merely transfers hazardous waste from a solid form to air, water and ash, she points out. Toxins produced during incineration include acidic gases, heavy metals as well as dioxins and furans. "The 'manure' will be hazardous and a problem to dispose," says Dutta.

4. Municipal solid waste contains a mix of plastics. Breaking down this waste emits hydrochloric acid which attacks the respiratory system, skin and eyes, resulting in coughing, vomiting and nausea. Polyethylene generates volatile compounds like formaldehyde and acetaldehyde, both suspected carcinogenic. Breathing styrene from polystyrene can cause leukaemia. Polyurethane is associated with asthma. Dioxin released by PVC is a powerful hormone disrupter and causes

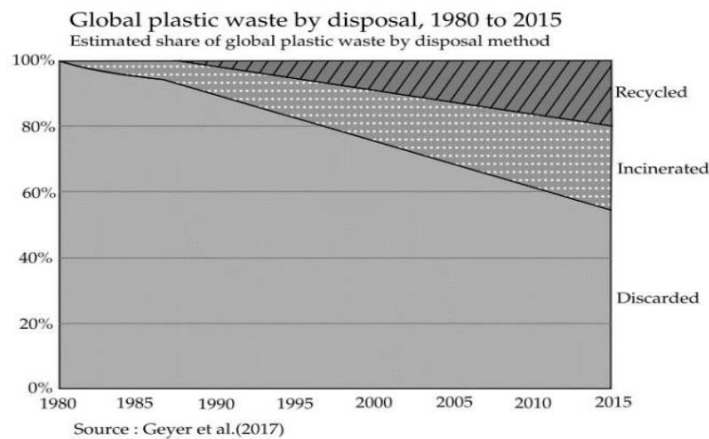
**birth defects and reproductive problems. There is no threshold dose to prevent it and our bodies have no defence against it.**

5. “Even the best run incinerators in the world have to deal with stringent norms, apart from contaminated filters and ash, making them hugely expensive to operate,” says Dutta. **In Germany, air pollution devices accounted for two-thirds the cost of incineration. Despite such efforts, the European Dioxin Inventory noted that the input of dioxin into the atmosphere was the highest from incineration.**

6. **How has global plastic waste disposal method changed over time? In the chart, we see the share of global plastic waste that is discarded, recycled or incinerated from 1980 through to 2015.**

Prior to 1980, recycling and incineration of plastic was negligible; 100 percent was therefore discarded. From 1980 for incineration and 1990 for recycling, rates increased on average by about 0.7 percent per year. In 2015, an estimated 55 percent of global plastic waste was discarded, 25 percent was incinerated and 20 percent recycled.

7. “India does not have the facility to test dioxin and the cost of setting one up is prohibitively expensive,” says Dutta. Besides, Indian garbage has a low calorific content of about 800 cal/kg, since it has high moisture and requires additional fuel to burn. Toxics link calculates that the electricity generated from such technology will cost between 5-7 per unit, which is six times higher than conventional energy. India has chosen a dioxin preventive route and burning of chlorinated plastics is prohibited under Municipal Solid Waste and Biomedical Rules. Nearly 80 percent of Indian garbage is recyclable or compostable. Resident associations, the informal sector and the municipal corporation can make Delhi’s garbage disappear in a sustainable manner. “Instead the government promotes end of pipeline solutions,” says Dutta.



On the basis of your understanding of the passage, answer any ten of the following questions by choosing the most appropriate option:

(a) Dioxinecauses.....

- (i) cancer
- (ii) heart attack
- (iii) hypertension
- (iv) sickness

(b) Which statements are NOT TRUE according to the passage?

1. India has adopted a preventive measure under which burning of chlorinated plastics is prohibited.
2. USEPA says that the risk of getting cancer from dioxin is hundred times higher than reported by the agency in 1994.
3. Incineration merely transfers hazardous waste from a solid form to air, water and ash.
4. Hydrochloric acid attacks the digestive system, nose and eyes which results in diabetes and nausea.

- (i) 2 and 4
- (ii) 1 and 3
- (iii) 3 and 4

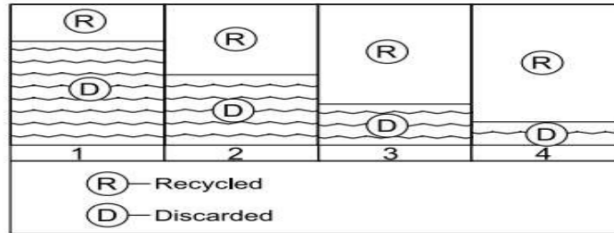


(iv) 1 and 2

(c) Garbage can be converted into energy by .....

- (i) gasification
- (ii) gratification
- (iii) a chemical process
- (iv) incinerators

(d) Based on the graphical chart in the passage, chose the option that correctly states the ratio between discarded waste to recycled global plastic waste in 2015.



- (i) option 1
- (ii) option 2
- (iii) option 3
- (iv) option 4

(e) Before 1980, how much global plastic waste was discarded?

- (i) 40%
- (ii) 60%
- (iii) 80%
- (iv) 100%

(f) Based on the given graphical representation of data in the passage, choose the option that lists the statements that are TRUE.

1. In the year 2015, the incinerated plastic waste disposal was 80%.
2. In the year 1980, share of discarded plastic waste was 100%.
3. Discarded plastic waste was 60% in the year 2010.
4. Recycled plastic waste in the year 2000 was less than 70%.

- (i) 1 and 3
- (ii) 2 and 3
- (iii) 1 and 4
- (iv) 3 and 4

(g) Former transport minister Rajendra Gupta claims that during gasification, ash produced can be used as.....

- (i) fuel
- (ii) manure
- (iii) pesticide
- (iv) none of these

**(h) Converting waste to energy project will consume how much energy?**

- (i) 20 megawatts**
- (ii) 200 megawatts**
- (iii) 250 megawatts**
- (iv) 25 megawatts**

**(i) By 2015, how much global plastic waste has been incinerated?**

- (i) 55%**
- (ii) 25%**
- (iii) 20%**
- (iv) 0.7%**

**(j) Which word in the passage means same as 'waste material'? (para 2)**

- (i) gasification**
- (ii) garbage**
- (iii) pollution**
- (iv) manure**

**(k) Arrange the sentences in the order in which they occurred year wise.**

- 1. From 1980, rates increased on average by about 0.7 percent per year for incineration.**
- 2. 20 percent waste was recycled in 2015.**
- 3. Prior to 1980, recycling and incineration of plastic was negligible.**
- 4. In 2015, an estimated 55 percent of global plastic waste was discarded.**

- (i) 2, 1, 4, 3**
- (ii) 4, 2, 3, 1**
- (iii) 1, 3, 4, 2**
- (iv) 3, 1, 4, 2**

## **PASSAGE 2**

**Read the following passage:**

1. No student of a foreign language needs to be told that grammar is complex. By changing word sequences and by adding a range of auxiliary verbs and suffixes, we are able to communicate tiny variations in meaning. We can turn a statement into a question, state whether an action has taken place or is soon to take place, and perform many other word tricks to convey subtle differences in meaning. Nor is this complexity inherent to the English language. All languages, even those of so-called 'Primitive tribes have clever grammatical components. The Cherokee pronoun system for example can distinguish between 'You and I' 'several other people and I' and 'you, another person and I'. In English, all these meanings are summed up in the one, crude pronoun 'We'. Grammar is universal and plays a part in every language no matter how widespread it is. So, the question which has baffled many linguists is—**who created grammar?**

2. At first, it would appear that this question is impossible to answer. To find out how grammar is created, someone needs to be present at the time of a language's creation and document its emergence. Many historical linguists are able to trace modern complex languages back to earlier languages, but in order to answer the question of how complex languages are actually formed, the researcher needs to observe how languages started from scratch. Amazingly, however, this is possible.

3. Some of the most recent languages evolved due to the Atlantic slave trade. At that time, slaves from a number of different ethnicities were forced to work together under colonizer's rule. Since they had no opportunity to learn each other's languages, they developed a makeshift language called a pidgin. Pidgins are strings of words copied from the language of the landowner. They have little in the way of grammar, and in many cases, it is difficult for a listener to deduce when an event happened, and who did what to whom. Speakers need to use circumlocution in order to make their meaning understood. Interestingly, however, all it takes for a pidgin to become a complex language is for a group of children to be exposed to it at the time when they learn their mother tongue. Slave children did not simply copy the strings of words uttered by their elders; they adapted their words to create a new, expressive language. Complex grammar systems which emerge from pidgins are termed creoles and they are invented by children.

4. Further evidence of this can be seen in studying sign languages for the deaf. Sign languages are not simply a series of gestures; they utilise the same grammatical machinery that is found in spoken languages. Moreover, there are many different languages used worldwide. The creation of one such language was documented quite recently in Nicaragua. Previously, all deaf people were isolated from each other, but in 1979 a new government introduced schools for the deaf. Although children were taught speech and lip reading in the classroom, in the playgrounds they began to invent their own sign system, using the gestures that they used at home. It was basically a pidgin. Each child used the signs differently, and there was no consistent grammar. However, children who joined the school later, when this inventive sign system was already around, developed a quite different sign language. Although it was based on the signs of the older children, the younger children's language was more fluid and compact, and it utilised a large range of grammatical devices to clarify meaning. What is more, all the children used the signs in the same way? A new creole was born.

5. Some linguists believe that many of the world's most established languages were creoles at first. The English past tense –ed ending may have evolved from the verb 'do'. 'It ended' may once have been 'It end-did'. Therefore it would appear that even the most widespread languages were partly created by children. Children appear to have innate grammatical machinery in their brains, which springs to life when they are first trying to make sense of the world around them. Their minds can serve to create logical, complex structures, even when there is no grammar present for them to copy.

On the basis of your understanding of the passage, answer any ten of the following questions by choosing the most appropriate option:

(a) Complexity in language is inherent to.....

- (i) all the languages
- (ii) English
- (iii) tribal languages
- (iv) primitive languages

(b) The Cherokee pronoun system can distinguish between.....

- (i) You and I
- (ii) Several other people and I
- (iii) You, another person and I
- (iv) All of these

(c) Based on your understanding of the passage, choose the option that lists the correct sequence of the sentences associated with the formation/ creation of grammar.

1. In order to answer the question of how complex languages are actually formed, the researcher needs to observe how languages started from scratch.

2. Slaves developed a make-shift language called a pidgin.

3. Some linguists believe that many of the world's most established languages were creoles at first.

4. To find out how grammar is created; someone needs to be present at the time of a language's creation.

- (i) 1, 2, 3, 4
- (ii) 3, 4, 1, 2
- (iii) 4, 1, 2, 3
- (iv) 2, 1, 3, 4

(d) All the following sentences about Nicaraguan sign language are true except:

- (i) the language has been created since 1979
- (ii) the language is based on speech and lip reading
- (iii) the language incorporates signs which children used at home
- (iv) the language was perfected by younger children

(e) Which option represents who partly invented the complex grammar system even for the most widespread languages?



(1)



(2)



(3)



(4)

- (i) image 1
- (ii) image 2
- (iii) image 3
- (iv) image 4

(f) Some of the most recent languages evolved due to the.....

- (i) Atlantic slave trade
- (ii) complex grammar system
- (iii) weak pronunciation
- (iv) none of these

(g) What is common to all languages?

- (i) basic grammar
- (ii) the sign rules
- (iii) grammar is common to all languages
- (iv) series of gestures

(h) According to the passage what can be attributed as a consequence of the Atlantic slave trade?

- (i) language's creation and documenting its emergence
- (ii) evolution of some of the most recent languages
- (iii) many word tricks can be performed to convey subtle differences in meaning
- (iv) a statement can be turned into a question

(i) What are creoles?

- (i) sign languages of deaf
- (ii) complex grammar systems which emerge from pidgins
- (iii) strings of words copied from the language of the landowner
- (iv) logical grammar invented by children

(j) Which word in the passage means opposite to 'easy'? (para 1)

- (i) sequences
- (ii) variation
- (iii) crude
- (iv) complex

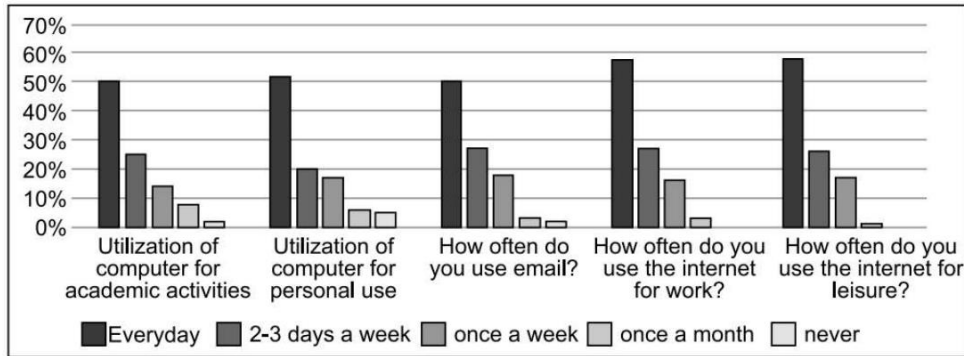
Pick the option that correctly tells how the younger children's mind work in the absence of grammatical knowledge.

1. They create logical structures.
  2. They imitate others.
  3. They have innate grammatical machinery in their brains.
  4. They learn other languages.
- (i) 2 and 3
  - (ii) 1 and 3
  - (iii) 2 and 4
  - (iv) 3 and 4

### PASSAGE 3

Read the passage given below:

1. The present generation is well updated in the use of internet and computers. The rapid development in computer technology and increase in accessibility of the internet for academic purposes has changed the face of education for everyone associated with it. Let's look at the data arising out of a recent survey that was done to ascertain the time spent on utilisation of the computer and internet:



2. At present, many schools and universities have been implementing internet-based learning, as it supplements the conventional teaching methods. The internet provides a wide variety of references and information to academics as well as scientific researchers. Students often turn to it to do their academic assignments and projects.

3. However, research on the Net is very different from traditional library, and the differences can cause problems. The Net is a tremendous resource, but it must be used carefully and critically.

4. According to a 2018 Academic Student e-book Experience Survey, conducted by LJ's research department and sponsored by EBSCO, when reading for pleasure, almost 74% of respondents said they preferred print books for leisure whereas, 45% of respondents chose e-books rather than the printed versions, for research or assignments.

5. When asked what e-book features make them a favourite for research, the respondents were clear. Having page numbers to use in citations, topped the list (75%); followed by the ability to resize text to fit a device's screen (67%); the ability to bookmark pages, highlight text, or take notes for later reference (60%); downloading the entire e-book (57%); and allowing content to be transferred between devices (43%) were the varied responses.

On the basis of your understanding of the passage, answer any ten out of the eleven questions that follow.

- (a) According to the passage, one of the reasons for the recent transformation of education is the:

- (i) techno-efficiency of the present generation
- (ii) expansion of courses on technology
- (iii) simplification of the teaching and learning method



(iv) easy availability of the internet

(b) Pick the option that lists statements that are NOT TRUE according to the passage.

1. Internet-based education can only complement familiar methods of education.
2. Net-based learning will replace face-to-face education.
3. The resources that the net provides are a danger to the education system.
4. The current times has seen a rise in the convenience of using the internet for academic purposes.

(i) 1 and 2

(ii) 3 and 4

(iii) 2 and 3

(iv) 1 and 4

(c) The word 'tremendous', as used in paragraph 3, means the same as

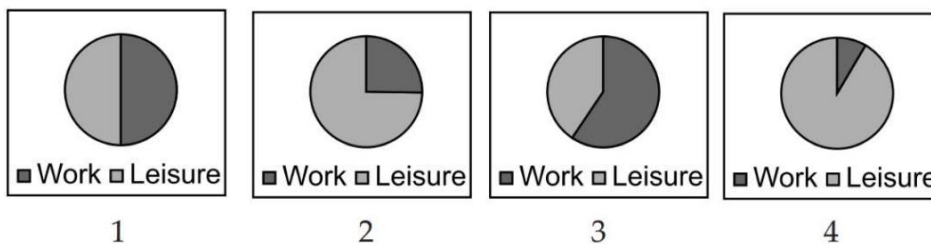
(i) 'expensive'

(ii) 'renowned'

(iii) 'innovative'

(iv) 'incredible'

(d) Based on the graphical chart in the passage, choose the option that correctly states the depiction of internet usage for work and for leisure, for once a month.



1

2

3

4

(i) option 1

(ii) option 2

(iii) option 3

(iv) option 4

...but it must be used carefully and critically. The idea of being careful and critical while using the

internet, is mainly a reference to

(i) hardware malfunction

(ii) plagiarism

(iii) troubleshooting

(iv) virus threat

(f) Based on the given graphical representation of data in the passage, choose the option that lists the statements that are TRUE with respect to the usage of email.

1. The everyday usage of email is more than the everyday usage of computer for personal use.
2. About 18% people use email once a week.
3. There are a smaller number of email users using it 2-3 times a week than the ones using it once a month.

4. Less than 5% of people never use the email.

- (i) 1 and 3
- (ii) 2 and 4
- (iii) 1 and 2
- (iv) 3 and 4

(g) Based on the given graphical chart, pick the option that lists the area of zero response from respondents

- (i) never using the internet for work and leisure
- (ii) daily use of the computer for academic activities
- (iii) writing and receiving emails once a week
- (iv) using the internet for personal tasks once a month

(h) In the cartoon, the student's reaction reveals that he is.....

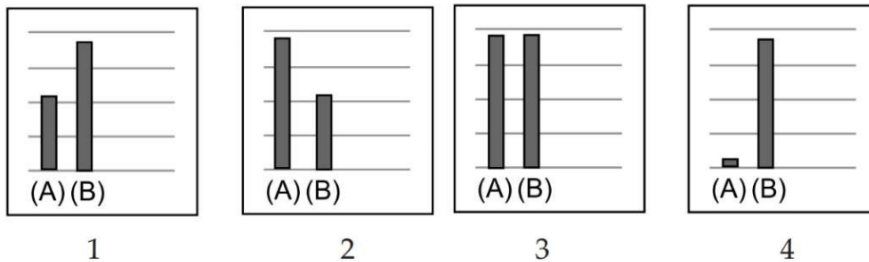
- (i) indignant
- (ii) apologetic
- (iii) obedient
- (iv) inquisitive

(i) Which of the following statements is NOT substantiated by information in paragraph 4?

- (i) About three-quarters of the respondents preferred print books for recreational reading
- (ii) A little less than a 50% of the respondents voted for e-books for research or assignments
- (iii) More than 50% respondents stated enjoying both versions of books for leisure reading
- (iv) The survey was intended for understanding the e-book experience among students

(j) According to the 2018 survey, which is the option that correctly displays the features of :

- (A) page numbers for use in citation and
- (B) content transfer between devices respectively.



- (i) option 1
- (ii) option 2
- (iii) option 3
- (iv) option 4

(k) Arrange the given e-book features preferred for research from the least favourite to the most favourite, from the following:

1. downloading the entire e-book.
2. choosing page numbers in citations.
3. highlighting text.



**4. resizing text to fit screen.**

- (i) 1, 3, 4, 2
- (ii) 3, 2, 1, 4
- (iii) 2, 4, 3, 1
- (iv) 4, 1, 2, 3

**PASSAGE 4**

**Read the passage given below:**

1. "Who doesn't know how to cook rice? Cooking rice hardly takes time." said my father. So I challenged myself. I switched from news to YouTube and typed, "How to cook rice?" I took one and a half cups of rice. Since I didn't have access to a rice cooker, I put the rice in a big pot. Firstly, the rice has to be washed to get rid of dust and starch. I thought I won't be able to drain the rice and that it will fall out of the pot. I observed the chef as I swirled the rice around and used my dexterous hands to drain it, not once, not twice, but three times. I looked down at the sink and saw less than 50 grains that made their way out of the pot. Suffice to say, I was up to the mark.

2. The video stated that the key to perfect rice is equal amounts of rice and water. I have heard that professionals don't need to measure everything; they just know what the right amount is. But as this was my first time in the kitchen. I decided to experiment by not measuring the water needed for boiling the rice. I wanted the rice to be firm when bitten, just like pasta. I don't enjoy the texture of mushy rice. It has to have that chutzpah; it has to resist my biting power just for a bit before disintegrating.

3. After what seemed like 10 minutes, all the water disappeared. I went in to give it a good stir. To my surprise, some of the rice got stuck to the pot. I tried to scrape it off but to no avail. At the same time, there was a burning smell coming from it. I quickly turned the stove off. "What have you done to the kitchen?" shouted Mother, while coming towards the kitchen. I managed to ward her off.

4. Finally, when the time came to taste my creation, I was surprised! It wasn't bad at all. The rice had the desired consistency. Sure, a little more salt would've been better, but I just added that while eating. The experience was fairly rewarding and memorable. It taught me a new sense of respect for those who cook food on a regular basis at home or engage in gourmet creations professionally.

**On the basis of your understanding of the above passage, answer Any Ten questions from the eleven given below:**

**(a) Father's question to the narrator, about knowing how to cook rice, was intended to**

- (i) criticize the narrator's lack of abilities
- (ii) make the process sound simple
- (iii) encourage the narrator to take up cooking
- (iv) showcase his own expertise in cooking rice

**(b) "I switched from news to YouTube...." Pick the option in which the meaning of 'switch(ed)' is NOT the same as it is in the passage.**

- (i) He switched on the radio to listen to the news while having dinner
- (ii) "Forget these diet supplements and switch to yoga, if you want a true sense of well-being"
- (iii) Mom switched to reading fiction recently because she was bored with cook-books
- (iv) The company will switch the trucks to other routes to bring down city pollution

(c) Based on your understanding of the passage, choose the option that lists the correct sequence of the process.

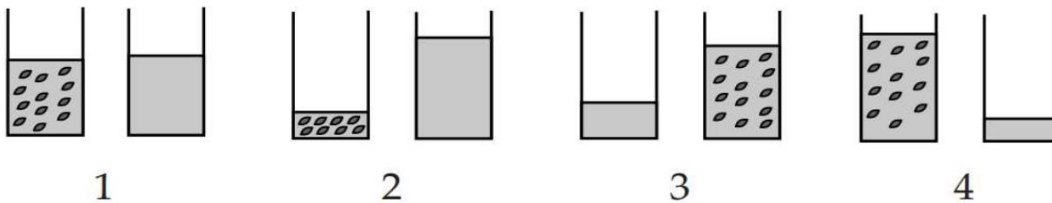
1. Use water to wash the rice.
2. Repeat the process three times.
3. Drain the water off.
4. Put rice in a utensil.
5. Swirl the water in and around the rice.

- (i) 4, 2, 1, 3, 5  
(ii) 1, 3, 2, 5, 4  
(iii) 4, 1, 5, 3, 2  
(iv) 5, 1, 2, 4, 3

(d) The narrator says that he has dexterous hands. He would have had a problem had it been the opposite. NOT BEING dexterous means, being

- (i) uncomfortable  
(ii) clumsy  
(iii) unclear  
(iv) clueless

(e) Which option represents the correct ratio of water to rice for cooking 'perfect rice'?



- (i) image 1  
(ii) image 2  
(iii) image 3  
(iv) image 4

(f) How did mother react to the burning smell?

- (i) she commented on it  
(ii) she brushed it aside  
(iii) she enquired about it  
(iv) she handled it

(g) According to the passage, the fact that the narrator risked experimentation, on his maiden attempt in the kitchen, shows that he was

- (i) conscientious  
(ii) nervous  
(iii) presumptuous  
(iv) courteous

(h) Pick the option showing the CORRECT use of the word 'chutzpah'.

- (i) It is the court's duty to dispense chutzpah to everyone irrespective of caste or creed  
(ii) The speaker may not have much of a stage presence, but you've got to admit she's got Chutzpah.

(iii) I could crack the code easily which proved me to be a chutzpah and I was the only one who could do so.

(iv) After his father's demise, the daughter took over the family's chutzpah to save it from disaster

(i) Pick the option that correctly states what DID NOT happen after the writer checked on the rice.

- (i) turning the stove off
- (ii) being taken aback at the condition of rice
- (iii) forgetting to scrape the stuck rice
- (iv) smelling the delicious aroma of cooked rice

(j) The narrator's creation was

- (i) almost perfect to taste
- (ii) way off from what he wanted
- (iii) overly seasoned
- (iv) quite distasteful.

(k) Pick the option that correctly lists the final feelings of the writer with reference to the cooking experience.

1. frustrating
2. amusing
3. satisfying
4. disillusioning
5. exacting
6. enlightening

- (i) 1 and 4
- (ii) 2 and 5
- (iii) 3 and 6
- (iv) 1 and 3

## PASSAGE 5

Read the following passage:

1. The youth is a dynamo, an ocean, an inexhaustible reservoir of energy. But this energy cannot be kept caged in prison. Its basic nature is to flow, to express itself. The youth energy on the basis of the nature of its expression can be divided into four categories.

2. The vast majority of the youth today is with the establishment, whose formula of life is learn, earn, burn and enjoy. It means learn to operate the modern devices and employ them to earn the maximum amount of wealth to the point of burning the natural resources of the earth, as well as yourself out, and then enjoy your own funeral. This category of youth is intelligent, skilful and hardworking but it lacks insight and foresight. They are self-indulgent and any sense of moral code of conduct is alien to their nature. Neither are they able to see in depth, to find out whether there is a deeper meaning and purpose to their human life, nor have they the capacity to look beyond the tips of their nose to find out the consequences of their way and approach, where it is leading them to. They are the ends into themselves and enjoyment is the motto of their life.

3. The second category of youth in nature and approach is the same but as it is less privileged and less qualified and skilled; it has lesser opportunities for earning and enjoying. Such youth

may be incited to be against the establishment. This opposition takes various forms. When it is well-organised and systemic it may take the form of political opposition and even go to the extent of expressing itself in unjust ways. When the opposition is not so intense and organised, it remains contended with giving verbal expression to its resentment periodically. The youth of the above two categories need to be shown the right path to positively channelise their energy.

4. The third section of youth is a sober and thoughtful class of people, which objectively observes and studies the phenomenon of development of the world. These youths find that man in his insatiable thirst for consumption has become blind and lost the sense of distinction between milk and blood. Today man in his mad rush for exploitation is sucking the blood of Mother Earth; leading to their destruction and is thereby digging his own grave. This responsible category of young people is looking for an alternative mode of development based on co-operation between man and man. This development based on mutual love, friendship and harmony is not only sustainable but leading to endless prosperity mutually. To bring about his natural revolution from death-movement to life-movement is the aim of this group.

5. The fourth and most vital group of youth which is going to steer humanity into the third millennium and act as the pioneer for the future development of planetary life is engaged in evolving a new way of life and releasing a new principle of global consciousness through a fundamental research in the science of life. The science of life is a new branch of knowledge which takes the whole man into account without dividing him into subjective and objective halves of spirituality and physicality and does not treat him either as a refined (thinking) animal or an ethereal entity, having its base in some other non-physical world. It rather, recognises man as a basic unit of conscious life which has got immense, practically inexhaustible, possibilities and potentialities for evolution, development and growth.

As per the Vedic formula, man is the micro-cosmos and his fullest flowering and enfoldment lies in his identification with the cosmos.

On the basis of your understanding of the passage, answer any ten of the following questions by choosing the most appropriate option:

(a) Which trait is lacking in the youth that is dexterous with the modern devices?

(i) intelligence (ii)

perseverance (iii)

foresight (iv)

skilfulness

Which category of youth supports the view that man's growth lies in his identification with cosmos?

(i) the youth that will take us to the third millennium

(ii) that which supports sustainable development

(iii) youth that opposes the establishment

(iv) youth that is self-indulgent and unscrupulous

(c) Which of the following options accurately describes the third category of youth?

1. Intelligent and skilful

2. Thoughtful and observant

3. Less intelligent and skilful

4. Problem solver and caring

(i) 1 and 3

(ii) 2 and 4

- (iii) 3 and 4
- (iv) 1 and 4

**(d) The thoughtful class of people wants cooperation between**

- (i) man and man
- (ii) man and nature
- (iii) man and animals
- (iv) man and environment

**(e) Which two categories of youth need to be shown the right path to help them channelise their energy?**

- (i) first and third
- (ii) second and fourth
- (iii) first and second
- (iv) third and fourth

**(f) As per the Vedic formula man's fullest flower in a nand foldment lies in the.....**

- (i) opposition of the cosmos
- (ii) cosmos
- (iii) identification of the cosmos
- (iv) none of these

**(g) Which option represents the CORRECT traits of fourth group of youth?**

- (i) Intelligent Hardworking Haughty
- (ii) Privileged Qualified Vile
- (iii) Pioneer Futurist Refined
- (iv) Skilled Ethereal Lethargic

**(h) How does the dissatisfied youth express itself?**

- (i) engage in political opposition
- (ii) engage in theft
- (iii) engage in wrong doings
- (iv) engage in immoral acts

**(i) In how many categories can youth energy be divided?**

- (i) three
- (ii) four
- (iii) two
- (iv) one

**(j) Which word in the passage means same as 'important'? (para 5)**

- (i) pioneer
- (ii) entity
- (iii) vital
- (iv) ethereal

**(k) Which of the following options accurately describes the second category of youth? 1. less privileged and less skilful**

**2. intelligent and skilful**

**3. thoughtful and observant**

**4. may resort to unjust ways and can be incited against the establishment**

**(i) 1 and 3**

**(ii) 2 and 4**

**(iii) 3 and 4**

**(iv) 1 and 4**

## PART B

II. Multiple Choice questions based on one unseen passage to assess comprehension, interpretation and inference. Vocabulary and inference of meaning will also be assessed. The passage may be factual, descriptive or literary. Ten out of eleven questions to be done.

### PASSAGE - 1

Read the passage given below.

1. The impact of technical advancement in armaments on man, needs to be analyzed with arational mind, and heart free from prejudices of any kind towards modernisation. The most noticeable impact of this development certainly has been the loss of immunity from violencefor successive generations ever since the invention of gunpowder.
2. In modern times, the presence of technically advanced arms, not only at the fronts but also among the civilian population, has vastly undermined the value of human life, and endangered the very entity of those virtues of self-restraint and discretion, on which. a peaceful and amiable society rests. However, an unbiased view of the present scenario, would refrain one from attributing the rising trends of violence to the availability of technically superior weapons, for one must not overlook the fact that Necessity is the mother of invention.
3. Every stage in the development of armaments has been marked by its distinct impact on society. When man fought with stones and his bare hands, the society was not yet compact. The discovery of metal and the use of spears, knives and arrows indicate the stage of the formation of small kingdoms. Fire continued to be an effective weapon of destruction.
4. When man introduced the cavalry into the army and improved the strategies of making war, some small kingdoms gave away to form empires, but with no revolutionary advances in armaments forthcoming, the political structure of society remained more or less stagnant for the many coming centuries.
5. The next significant development was the use of gunpowder, which could be used to perform acts which were then thought to be impossible. Gunpowder was used to form the ammunition of several guns and canons. This sudden advances in weaponry not only facilitated the control of a large mass of people by relatively few armed men that helping to form strong empires, but the availability of the new technology to a select few nations enabled the formation of colonies in continents which did not have access to the modernized technologies of warfare.
6. Modern technological advances in armaments aided the formation of nation states in Europe. The extensive use of the fire-power lent a lethal edge to the naval power which proved to be the

greatest asset to any nation in the 19th century. Small United Nations States of Europe with strong navies, modern arms and disciplined men gained control of lands in foreign continents far greater in areas than the parent countries.

On the basis of your understanding of the above passage, answer ANY TEN questions from the eleven given below.

i. Necessity is the mother of invention. This statement

- a. where there is mother there is invention
- b. when necessity arises invention is done
- c. most of the invention are preplanned
- d. nothing happens without creating congenial environment

ii. The invention of modern weapons have resulted into

- a. loss of immunity from war in the society
- b. successive wars for the last two centuries.
- c. arms race among the nations
- d. loss of life and property every now and then

iii. Small kingdoms turned into big empires, after

- a. the invention of cavalry and canons and its introduction into the army
- b. the introduction of nuclear arms into the army
- c. the end of the use of knives, arrows and swords
- d. the end of the 19th century

iv. The style of the passage is

- a. informative
- b. analytical
- c. retrospective
- d. provocative

v. The value of human life has been undermined by

- a. the virtues of self-restraint and discretion
- b. peaceful and amiable society
- c. advancement in armaments
- d. civilian population



vi. The greatest asset to any nation in 19<sup>th</sup> century was

- a. Muscle power
- b. Wind power
- c. Solar power
- d. Fire power

vii. Which of the following statements is not true

- a. early man fought with stone
- b. weaponry advancement does not have direct impact on society.
- c. fire was used as an effective weapon of destruction.
- d. discovery of metal helped in forming small kingdoms.

viii. Few nations could form colonies in continents due to

- a. Less modern technology of warfare
- b. Significant use of gun powder
- c. Meekness of large mass of people
- d. None of the above

ix. Which of the following does not mean "Cavalry" as used in (para 4)

- a. Squadron
- b. Battalion
- c. Troop
- d. Civilian

x. Which word given below means same as "Asset" (para 6)

- a. Advantage
- b. Liability
- c. Handicap
- d. None of the above

xi. Which word given below means same as "Facilitate" (para 5)

- a. Make possible
- b. Make impossible
- c. Slow down
- d. Demote

## PASSAGE - 2

Read the passage given below:

1. The therapeutic value and healing powers of plants were demonstrated to me when I was a boy of about ten. I had developed an acute persistent abdominal pain that did not respond readily to hospital medications. My mother had taken me to the city's central hospital on several occasions where different drugs were tried on me. In total desperation, she took me to Egya Mensa, a well-known herbalist in my hometown in the Western province of Ghana. He had earned the reputation of offering excellent help when they were confronted with difficult cases where western medicine had failed to affect a cure.
2. After a brief interview, he left us waiting in his consulting room while he went out to the field. He returned with several leaves and the bark of a tree and one of his attendants immediately prepared a decoction. I was given a glass of this preparation, it tasted extremely bitter, but within an hour or so. I began to feel relieved. The rest of the decoction was put in two large bottles so that I could take doses periodically. Within about three days, the frequent abdominal pains stopped and I recall gaining a good appetite. I have appreciated the healing powers of medicinal plants ever since.
3. My experience may sound unusual to those who come from urban areas of the developed world, but for those in the less affluent nations, such experiences are a common occurrence. In fact, demographic studies by various national governments and inter-governmental organisations such as the World Health Organisation (WHO) indicate that for 75 to 90 per cent of the rural population of the world, the herbalist is the only person who handles their medical problems.
4. Over the years, I have come to distinguish between three types of medicinal practitioners. The first is the herbalist who generally enjoys the prestige and reputation of being the real traditional medical professional. The second group represents divine healers. They are fetish priests whose practice depends upon their purported supernatural powers of diagnosis. Thirdly, the witch doctor, the practitioner who is credited with the ability to intercept the evil deeds of a witch.
5. These practitioners have done well by relying almost exclusively on herbs for actual treatment while serving as the people's spiritual leaders and psychologists.
6. From the drug-stores in New Delhi, I picked up some well-packaged bark and roots of Rauwolfia Serpentina, a plant that was very well-known in ancient Asiatic medicine. The storekeeper said that it cures hypertension. This plant has the power to lower the blood pressure and pulse. It is used to calm down mad people because alkaloids in the plant have a specific influence on the mind.

**On the basis of your understanding of the above passage, answer ANY TEN questions from the eleven given below:**

**The special thing in the plant Rauwolfia Serpentina that influences the mind is.....**

- a. metals**
- b. alkaloids**
- c. alkalies**
- d. aroma**

**ii. Who was Egya Mensa?**

- a. doctor**
- b. herbalist**
- c. chemist**
- d. yoga guru**

**iii. Which parts of the plant Rauwolfia Serpentina are used to cure hypertension?**

- a. stem and roots**
- b. leaves and flowers**
- c. bark and roots**
- d. flowers and roots**

**iv. Who cures the evil deeds of a witch?**

- a. doctor**
- b. herbalist**
- c. c. priest**
- d. d. witch doctor**

**v. The storekeeper (in paragraph 6) felt herbal medicine was better as most drugs were:**

- a. traditional in nature**
- b. synthetic and expensive**
- c. difficult to procure**
- d. dangerous**

**vi. The author was suffering from**

- a. Headache**
- b. Stomach ache**
- c. Muscle ache**
- d. Abdominal pain**

- vii. WHO demographic studies display that
- a. Herbalist treats majority of the rural population
  - b. Urban population does not use herbalist
  - c. Herbalist has no impact on population
  - d. Herbalist has lot of impact on population

viii. Rauwolfia Serpentina is useful in curing

- a. Headache
- b. Muscle pain
- c. Hypertension
- d. Fever

ix. A word in Para 1 which means "steady and continuous"

- a. Persistent
- b. Occasional
- c. Intermittent
- d. None of the above

x. A word from the passage meaning 'well-off' is (Para 3)

- a. affluent
- b. poor
- c. impoverished
- d. all of the above

xi. The word 'acute' means.....

- a. slight
- b. great
- c. severe in effect
- d. sorrow

### PASSAGE - 3

Read the passage carefully:

1. There were hundreds of us in the lecture hall, watching the descent of the Vikram Lander of the Chandrayaan-2 spacecraft, with the Pragyan rover, descending on the lunar surface, all 1498 kg of it hurtling down, pulled by the gravity of Moon. It had separated from the rest of the spacecraft four days ago, leaving the Orbiter, where it is going to spend at least seven years, with its eight excellent instruments sending back crucial scientific information about the Moon, its environment and even the Sun.

2. We were applauding as the green dot on the plot of the landing trajectory, showing the altitude and the range of the lander, reached about two km above the surface, at which point its speed was about 50 m/s. Then our spirits fell as it deviated from the expected course, and got stuck, indicating that we had lost communication. This is the phase, which the ISRO Chairperson Dr. K. Sivan had described as the “15 minutes of terror”. We still haven't recovered communication but thermal imaging from the orbiter's cameras has located the site of the landing. The extent of the damage to Vikram is still being assessed. If things had gone according to plan, India would have joined an elite club of three other nations that have landed in one piece on an extra-terrestrial surface—the Moon.

3. Chandrayaan-2 was launched in July on the GSLV-3, taking a complicated, fuel efficient path to the Moon lasting over 40 days. In contrast with the Apollo missions being launched on the more powerful Saturn-V launchers in the 1960s, this mission was kept affordable, but sent the mission on a long journey fraught with possible pitfalls.

4. We are now hopeful that we will gain contact with Vikram, lovingly named after the founder of ISRO in its birth centenary year. Even if some of the instruments can be made to work, we would have valuable information and images close to the lunar surface and learn more about what to do and what not to in our next attempt.

5. The CLASS instrument on the orbiter will quantify the amount of calcium, magnesium, iron, sodium and other useful elements on or below the lunar surface through X-ray fluorescence. The IIRS instrument, also on the orbiter, will tell us about water and minerals under the surface.

6. Even if we choose not to live on the Moon, we need a Moon base, as a refuelling station, or as an assembly or service station. We have to know what resources are available on the Moon. What is a small part of this mission is not successful? In my mind, the journey of ISRO team that has brought the mission to where it is now is more important than the task that will be performed. Similarly, the complicated journey of the spacecraft from the Earth to and around the Moon has adequately demonstrated what Indian technology can achieve.

On the basis of your understanding of the above passage, answer ANY TEN questions from the eleven given below. (1x10 = 10)

- i. How many days ago was Vikram Lander separated from the spacecraft?
  - a. one day
  - b. two days
  - c. three days
  - d. four days

- ii. For how long was it supposed to remain upon the lunar surface?
- a. 5 years
  - b. 6 years
  - c. 7 years
  - d. 8 years
- iii. Based on your understanding of the passage, choose the option that lists the CORRECT order of these sentences.
- 1. The extent of the damage to Vikram is still being assessed.
  - 2. The IIRS instrument, also on the orbiter, will tell us about water and minerals under the surface.
  - 3. Vikram Lander deviated from the expected course, and got stuck, indicating that we had lost communication.
  - 4. Chandrayaan-2 was launched in July on the GSLV-3.
- a. 1, 2, 4, 3
  - b. 3, 1, 4, 2
  - c. 3, 2, 4, 1
  - d. 2, 3, 4, 1
- iv. Chandrayaan-2 was supposed to land on.....
- a. Southern Pole
  - b. Northern Pole
  - c. Lunar surface
  - d. Equatorial region
- v. Chandrayaan-2 was launched in July on the.....
- a. ALSV-5
  - b. GSLV-3
  - c. IIRS
  - d. GSLV-4 1.2
- vi. Why were the scientists happy when they saw the green dot on the trajectory?
- a. because it told about water and minerals under the surface.
  - b. because it indicated the altitude and the range of the lander
  - c. because it told about the presence of gaseous elements
  - d. because it reached in expected course of time
- vii. What is the function of CLASS instrument on the orbiter?

- a. it gives information about the moon
- b. it shows images of the moon
- c. it quantifies the amount of calcium, magnesium, iron, sodium and other useful elements on or below the lunar surface
- d. it measures the air pressure on moon

viii. Which things are required on the moon even if we don't make it our habitat?

- a. a moon base
- b. a refuelling station
- c. a service station
- d. all of these

ix. Which word in the passage means same as 'Crucial'? (para 1)

- a. pivotal
- b. critical
- c. significant
- d. all of the above

x. Pick the option that tells the feeling of the writer when the Lander deviated from the expected course, and got stuck, indicating that it had lost communication.

- a. frustrating
- b. provoking
- c. disheartening
- d. hostile

xi. The "15 minutes of terror" refers to

- a. Pragyan rover deviating from its course
- b. Pragyan rover getting damaged
- c. Pragyan rover exploding
- d. Pragyan rover disappearing

#### PASSAGE – 4

Read the passage given below:

1. Do you know the difference between a submarine and a submersible? A submarine is a watercraft that is capable of independent operation under the sea. Submarines do not require support ships because submarines can renew their air and power supplies independently. Submersibles also submerge and operate underwater, but they need the support of a larger

vessel. Submersibles cannot renew their air and power supplies without support. For this reason, submersibles are usually smaller and cannot spend as much time underwater as submarines.

2. The first documented submersible was constructed in 1620 by Cornelius Drebbel. It was powered by rowing oars underwater. In 1648 Bishop John Wilkins wrote, "It may be of great advantages against a Navy of enemies, who by this may be undermined in the water and blown up." Over one-hundred years later, the first military submarine was ready to be deployed.

3. The Turtle was the world's first submarine used in combat. Designed by David Bushnell in 1775, it was deployed by the Continental Army during the American Revolutionary War.

4. Another notable submarine originally designed for war was Julius H. Kroehl's Sub Marine Explorer. Built between 1863 and 1866, this submarine was created for the North during the American Civil War but the war ended before it went into use. After the war it was used commercially to harvest pearls in Panamanian waters during the late 1860s. Unfortunately, the dangers of decompression sickness (a condition that occurs when divers rise to the water's surface too quickly) were not understood. While experimenting with the Sub Marine Explorer in 1867, Kroehl himself perished from decompression sickness. In 1869 a new engineer put the Sub Marine Explorer back to the task of harvesting pearls. Tragically, use of the Sub Marine Explorer was discontinued after the entire crew died from decompression sickness.

5. Submarine use increased greatly during World War I. Due to innovations in engineering, such as a dual power system using both diesel and electric sources, submarines had finally developed into effective war machines like the U-Boat.

6. Modern submarines are now powered by a nuclear reactor. The nuclear reactor generates a tremendous amount of power which allows submarines to operate at high speeds for long durations. The only factor limiting the amount of time that an advanced submarine can remain submerged is the amount of food and water that it can carry.

On the basis of your understanding of the above passage, answer ANY TEN questions from the eleven given below:

- i. For what purpose were submersibles originally designed?
  - a. Transporting passengers underwater without the threat of storms
  - b. Exploring under the sea
  - c. Smuggling weapons and outlawed materials
  - d. Attacking ships on the surface of the water
- ii. Why was the Sub Marine Explorer originally created?
  - a. To assist the North in the Civil War



- b. To harvest pearls
- c. To explore undersea
- d. To experiment with decompression sickness

iii. Which is most likely to limit the how long a modern submarine can remain submerged?

- a. The amount of fuel in the submarine
- b. The air supply in the submarine
- c. The amount of food and water aboard the submarine
- d. There is no limit to the amount of time a modern submarine can remain

submerged iv. How were U-Boats powered?

- a. Hand crank
- b. Diesel
- c. Battery
- d. Both B & C

v. Which of the following statements best describes the Turtle according to the text?

- a. The Turtle was the first submarine used during war to destroy another ship.
- b. The Turtle was the first submersible used during war to attack another ship.
- c. The Turtle was the first submersible used during war to destroy another ship.
- d. The Turtle was the first submarine used during war to attack another ship. vi.

Which of the following best describes why the author most likely wrote this text?

- a. To entertain his audience with stories about submarines
- b. To educate his readers about how submarines work
- c. To inform his readers about the evolution of submarines
- d. To convince his audience to purchase a submarine

vii. Which is the most likely reason why the author wrote the first paragraph?

- a. To explain a concept that would be referenced throughout the text
- b. To introduce the main idea of the text
- c. To get the reader's attention with startling information
- d. To amuse the reader with an interesting historical anecdote

viii. Which does not describe a way in which submersibles are different from submarines?

- a. Submersibles are usually smaller than submarines.
- b. Submersibles are not capable of independent operation.
- c. Submersibles can usually spend more time underwater than submarines.
- d. Submersibles cannot independently renew their air and power supplies.

ix. Which of the following best describes how the text is structured in the first paragraph?

- a. Compare and Contrast
- b. Chronological
- c. Problem and Solution
- d. Sequence / Process

x. Which of the following would be the best title for this reading passage?

- a. How Submarines Work
- b. Evolution of Submarines
- c. Turtle: The First Combat Submarine
- d. The Differences between Submarines and Submersibles

xi. Which word in the passage means same as 'Combat'? (para 3)

- a. warfare
- b. give up
- c. submit
- d. surrender

#### PASSAGE –5

1. Philosophy of Education is a label applied to the study of the purpose, process, nature and ideals of education. It can be considered a branch of both philosophy and education. Many educationalists consider it a weak and woolly field, too far removed from the practical applications of the real world to be useful.

3. Plato is the earliest important educational thinker, and education is an essential element in "The Republic" (his most important work on philosophy and political theory, written around 360 B.C.). In it, he advocates some rather extreme methods: removing children from their mothers' care and raising them as wards of the state, and differentiating children suitable to the various castes, the highest receiving the most education, so that they could act as guardians of the city and care for the less able. He believed that education should be holistic, including facts, skills, physical discipline, music and art.

4. Aristotle considered human nature, habit and reason to be equally important forces to be cultivated in education, the ultimate aim of which should be to produce good and virtuous citizens. He proposed that teachers lead their students systematically, and that repetition be used as a key tool to develop good habits, unlike Socrates' emphasis on questioning his listeners to bring out their own ideas. He emphasized the balancing of the theoretical and practical aspects of subjects taught, among which he explicitly mentions reading, writing, mathematics, music,

physical education, literature, history, and a wide range of sciences, as well as play, which he also considered important.

5. During the Medieval period, the idea of Perennialism was first formulated by St. Thomas Aquinas in his work "De Magistro". Perennialism holds that one should teach those things deemed to be of everlasting importance to all people everywhere, namely principles and reasoning, not just facts (which are apt to change over time), and that one should teach first about people, not machines or techniques. It was originally religious in nature, and it was only much later that a theory of secular perennialism developed.

6. During the Renaissance, the French skeptic Michel de Montaigne (1533 - 1592) was one of the first to critically look at education. Unusually for his time, Montaigne was willing to question the conventional wisdom of the period, calling into question the whole edifice of the educational system, and the implicit assumption that university-educated philosophers were necessarily wiser than uneducated farm workers, for example.

On the basis of your understanding of the above passage, answer ANY TEN questions from the eleven given below. [1X10=10]

i. Philosophy of Education is a branch of both –

- a. Psychology and Education
- b. Philosophy and Education
- c. Psychology and Teaching
- d. None of the above

ii. What is the difference between the approaches of Socrates and Aristotle?

- a. Aristotle felt the need for repetition to develop good habits in students; Socrates felt that students need to be constantly questioned
- b. Aristotle felt the need for rote-learning; Socrates emphasized on dialogic learning
- c. There was no difference
- d. Aristotle emphasized on the importance of paying attention to human nature; Socrates emphasized upon science

iii. Why do educationists consider philosophy a 'weak and woolly' field?

- a. It is not practically applicable
- b. Its theoretical concepts are easily understood
- c. It is irrelevant for education
- d. None of the above

iv. What do you understand by the term 'Perennialism' from the given passage?

- a. It refers to something which is of ceaseless importance
- b. It refers to something which is quite unnecessary
- c. It refers to something which is abstract and theoretical
- d. It refers to something which existed in the past and no longer exists now

v. 'The Republic' is an important work on

- a. Philosophy
- b. Political Theory
- c. Education
- d. both a and b above

vi. Plato believed that -

- a. only the rich have the right to acquire education
- b. education should be holistic
- c. only a select few are meant to attend schools
- d. all pupils are not talented

vii. According to Aristotle ultimate aim of education is

- a. Produce virtuous citizens
- b. Produce intelligent citizens
- c. Produce good citizens
- d. both (a) and (c)

viii. Why did Aquinas propose a model of education which did not lay much emphasis on facts?

- a. Facts are not important
- b. Facts do not lead to holistic education
- c. Facts change with the changing times
- d. Facts are frozen in time

ix. Who questioned the assumption that university-educated philosophers were necessarily wiser than uneducated farm workers?

- a. Plato
- b. Aristotle
- c. Montaigne
- d. Socrates

x. Choose the word which is most nearly the same in meaning as the word given in bold.

**Skeptic**, (Para 6)

- a. believer
- b. doubter
- c. optimist
- d. disciple

xi. Choose the word which is most nearly the same in meaning as the word

given in bold. **Explicitly** (Para 4)

- a. uncertain
- b. precisely and clearly
- c. indefinitely
- d. questionable

**NOTE: DO THIS ASSIGNMENT IN YOUR 'READING & WRITING REGISTER'**

## **SUBJECT- MATHEMATICS**

**I) QUESTIONS TO BE SOLVED:**

**Very Short Answer Type Questions:**

- 1) If a matrix A is both symmetric and skew symmetric, then A is a:
- a) Diagonal Matrix
  - b) Square Matrix
  - c) Null Matrix

d) None

2) Choose the correct option:

- a) Every unit matrix is a scalar matrix.
- b) Every scalar matrix is a unit matrix.
- c) Every Diagonal matrix is a unit matrix.
- d) A square matrix in which all elements are 1 is a unit matrix.

3) If  $A'$  and  $B'$  are the transpose matrices of the square matrices  $A$  and  $B$  respectively, then  $(AB)' =$

- a)  $A'B'$
- b)  $AB'$
- c)  $BA'$
- d)  $B'A'$

4) If  $M = \begin{bmatrix} 1 & 2 \\ 2 & 3 \end{bmatrix}$  and  $M^2 - \lambda M - I = 0$  then  $\lambda =$

- a) 4
- b) -3
- c) 2
- d) 8

5) Matrix multiplication is:

- a) Commutative
- b) Associative
- c) Both
- d) None

6) If  $A$  is a matrix of order  $3 \times 4$  and  $B$  is a matrix of order  $4 \times 3$  then order of matrix  $AB$  is \_\_\_\_\_.

7) The order of product matrix  $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} [2 \ 3 \ 4]$  is \_\_\_\_\_

8) Relation between cofactors and minor is  $C_{ij} =$  \_\_\_\_\_

9) If  $\begin{vmatrix} 3 & x \\ x & 1 \end{vmatrix} = \begin{vmatrix} 3 & 2 \\ 4 & 1 \end{vmatrix}$  then value of  $x$  is \_\_\_\_\_

10) If  $A$  is symmetric matrix the  $A^3$  is a \_\_\_\_\_ matrix.

11) If  $[2x \ 4] \begin{bmatrix} x \\ -8 \end{bmatrix} = 0$ , then find the positive value of  $x$ .

12) The elements  $a_{ij}$  of a  $3 \times 3$  matrix are given by  $a_{ij} = \frac{1}{2} |-3i + j|$ . Write the value of element  $a_{32}$ .

13) For what value of  $x$ , is the matrix  $A = \begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ x & -3 & 0 \end{bmatrix}$  a skew symmetric

matrix?

14) If  $\begin{bmatrix} xy & 4 \\ z + 6 & x + y \end{bmatrix} = \begin{bmatrix} 8 & w \\ 0 & 6 \end{bmatrix}$  write the value of  $x + y + z$ .

15) Find the cofactor of the element of second row and third column in the

determinant  $\begin{vmatrix} 2 & -3 & 5 \\ 6 & 0 & 4 \\ 1 & 5 & -7 \end{vmatrix}$ .

### Short Answer Type Questions:

16) If Matrix  $A = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$  and  $A^2 = KA$ . Find the value of  $K$ .

17) If  $A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$  then find the value of  $A^2 - 5A + 4I$ .

18) If  $A = \begin{bmatrix} 1 \\ -4 \\ 3 \end{bmatrix}$   $B = [-1 \ 2 \ 1]$ , then verify that  $(AB)' = B'A'$

19) Using elementary row operation find the inverse of matrix  $A = \begin{bmatrix} 2 & 5 \\ 1 & 3 \end{bmatrix}$

20) Using elementary operation find the inverse of matrix  $A = \begin{bmatrix} 6 & 5 \\ 5 & 4 \end{bmatrix}$

21) Express the matrix  $A = \begin{bmatrix} 2 & 4 & -6 \\ 7 & 3 & 5 \\ 1 & -2 & 4 \end{bmatrix}$  as the sum of symmetric and skew

symmetric matrix.

22) If  $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & -2 \\ a & 2 & b \end{bmatrix}$  is a matrix satisfying  $AA^T = 9I_3$  then the values of a and b.

23) Solve for x:  $\begin{bmatrix} 2x & 3 \end{bmatrix} \begin{bmatrix} 1 & 2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} x \\ 8 \end{bmatrix} = 0$

24) Find the value of x:  $\begin{vmatrix} x+1 & x-1 \\ x-3 & x+2 \end{vmatrix} = \begin{vmatrix} 4 & -1 \\ 1 & 3 \end{vmatrix}$

25) For what value of x,  $A = \begin{bmatrix} 2(x+1) & 2x \\ x & x-2 \end{bmatrix}$  is a singular matrix?

### Long Answer Type Questions-1:

26) Prove that  $\begin{vmatrix} a & a^2 & bc \\ b & b^2 & ca \\ c & c^2 & ab \end{vmatrix} = (a-b)(b-c)(c-a)(ab+bc+ca)$

27) Prove that  $\begin{vmatrix} b+c & a & a \\ b & c+a & b \\ c & c & a+b \end{vmatrix} = 4abc$

28) Prove that  $\begin{vmatrix} a & b & c \\ a-b & b-c & c-a \\ b+c & c+a & a+b \end{vmatrix} = a^3 + b^3 + c^3 - 3abc$



29) Prove that  $2 \begin{vmatrix} 1 & 1+p & 1+p+q \\ 2 & 3+2p & 1+3p+2q \\ 3 & 6+3p & 1+6p+3q \end{vmatrix} = 1$

30) Prove that  $\begin{vmatrix} a^2+1 & ab & ac \\ ab & b^2+1 & bc \\ ca & cb & c^2+1 \end{vmatrix} = 1+a^2+b^2+c^2$

31) Prove that  $\begin{vmatrix} 3x & -x+y & -x+z \\ x-y & 3y & z-y \\ x-z & y-z & 3z \end{vmatrix} = 3(x+y+z)(xy+yz+zx)$

32) Prove that  $\begin{vmatrix} \alpha & \beta & \gamma \\ \alpha^2 & \beta^2 & \gamma^2 \\ \beta+\gamma & \gamma+\alpha & \alpha+\beta \end{vmatrix} = (\alpha-\beta)(\beta-\gamma)(\gamma-\alpha)(\alpha+\beta+\gamma)$

33) Prove that  $\begin{vmatrix} x+y & x & x \\ 5x+4y & 4x & 2x \\ 10x+8y & 8x & 3x \end{vmatrix} = x^3$

34) Using Property solve:  $\begin{vmatrix} x+a & x & x \\ x & x+a & x \\ x & x & x+a \end{vmatrix} = 0$

35) Prove that:  $\begin{vmatrix} -a^2 & ab & ac \\ ba & -b^2 & bc \\ ca & cb & -c^2 \end{vmatrix} = 4a^2b^2c^2$

36) Solve  $\begin{vmatrix} a+x & a-x & a-x \\ a-x & a+x & a-x \\ a-x & a-x & a+x \end{vmatrix} = 0$

37) Prove that:  $\begin{vmatrix} x & y & z \\ x^2 & y^2 & z^2 \\ x^3 & y^3 & z^3 \end{vmatrix} = xyz(x-y)(y-z)(z-x)$

38) If  $x \neq y \neq z$  and  $\begin{vmatrix} x & x^2 & 1+x^3 \\ y & y^2 & 1+y^3 \\ z & z^2 & 1+z^3 \end{vmatrix} = 0$  then prove that  $xyz = -1$

39) Prove that:  $\begin{vmatrix} 1 & a & a^2 - bc \\ 1 & b & b^2 - ca \\ 1 & c & c^2 - ab \end{vmatrix} = 0$

40) Prove that:  $\begin{vmatrix} a^2 + 2a & 2a + 1 & 1 \\ 2a + 1 & a + 2 & 1 \\ 3 & 3 & 1 \end{vmatrix} = (a - 1)^3$

### Long Answer Type Questions-2

41) Using elementary operation find the inverse of  $A = \begin{bmatrix} 1 & 3 & -2 \\ -3 & 0 & -1 \\ 2 & 1 & 0 \end{bmatrix}$

42) Using elementary operation find the inverse of  $A = \begin{bmatrix} 3 & 0 & -1 \\ 2 & 3 & 0 \\ 0 & 4 & 1 \end{bmatrix}$

43) Solve by matrix method  $2x + 8y + 5z = 5, x + y + z = -2, x + 2y - z = 2.$

44) Solve by matrix method:

$$\frac{2}{x} + \frac{3}{y} + \frac{10}{z} = 4, \quad \frac{2}{x} - \frac{6}{y} + \frac{5}{z} = 1, \quad \frac{6}{x} + \frac{9}{y} - \frac{20}{z} = 2$$

45) If  $A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$  and  $B = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$  then find AB. Use this solve the

system of equation  $x - y = 3, 2x + 3y + 4z = 17, y + 2z = 7.$

46) If  $A = \begin{bmatrix} 1 & -2 & 0 \\ 2 & 1 & 3 \\ 0 & -2 & 1 \end{bmatrix}$  and  $B = \begin{bmatrix} 7 & 2 & -6 \\ -2 & 1 & -3 \\ -4 & 2 & 5 \end{bmatrix}$  then find AB. Use this solve the

system of equation  $x - 2y = 10, 2x + y + 3z = 8, -2y + z = 7.$

47) If  $A = \begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix}$  and  $B = \begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$  then find AB. Use this solve the

system of equation  $x - y + 2z = 1$ ,  $2y - 3z = 1$  and  $3x - 2y + 4z = 2$ .

48) If  $A = \begin{bmatrix} 2 & 3 \\ 1 & -4 \end{bmatrix}$ ,  $B = \begin{bmatrix} 1 & -2 \\ -1 & 3 \end{bmatrix}$  verify that  $(AB)^{-1} = B^{-1}A^{-1}$

49) Two schools P and Q want to award their selected students on the values of discipline, politeness and punctuality. The School P wants to award Rs. x each, Rs. y each and Rs. z each for three respective values to 3, 2 and 1 students respectively with a total award money of Rs 1000. School Q wants to spend Rs. 1500 to award its 4, 1 and 3 students on the respective values ( by giving the same award money to the three values as before). If the total amount of award for one prize on each value is Rs. 600 using matrices find the award money for each value.

50) A total amount of Rs 7000 is deposited in three different saving bank accounts with annual interest rate of 5%, 8% and  $8\frac{1}{2}\%$  respectively. The total annual interest from these three accounts is Rs 550 equal amounts have been deposited in the 5% and 8% saving accounts. Find the amount deposited in each of the three accounts with the help of matrices?

**Subject: Economics**

**Project work on the allotted topics:**

**Guidelines Related to Project:**

1. The project must be handwritten.
2. The project must include a cover page, certificate, acknowledgement, index and a bibliography.
3. The content of the project should be presented as follows:
  - i. Introduction
  - ii. Function, scopes, characteristics, merits and demerits, etc.
  - iii. Case Study
  - iv. Measures/Precautions/Suggestions
  - v. Conclusion
4. Sequence of Project:
  - i. Cover page
  - ii. Certificate
  - iii. Acknowledgement
  - iv. Index
  - v. Content
  - vi. Bibliography
5. Last date of submission: 20/06/2022.
6. The project should contain appropriate pictures and flow charts related to the contents.

<b>S.NO.</b>	<b>TOPIC</b>
1.	NEW ECONOMIC POLICY
2.	DEMONITIZATION
3.	GST
4.	GROWTH OF EDUCATION SECTOR IN INDIA
5.	AGRICULTURAL DIVERSIFICATION
6.	ORGANIC FARMING
7.	UNEMPLOYMENT
8.	SUSTAINABLE ECONOMIC DEVELOPMENT
9.	MICRO AND SMALL SCALE INDUSTRIES
10.	HUMAN DEVELOPMENT INDEX
11.	SELF HELP GROUP
12.	LIVESTOCK- BACKBONE OF RURAL INDIA
13.	FIVE YEAR PLANS
14.	GREEN REVOLUTION
15.	INDUSTRIAL POLICY RESOLUTION, 1956
16.	HUMAN CAPITAL FORMATION IN INDIA
17.	SOURCES OF RURAL CREDIT
18.	MINIMUM SUPPORT PRICE
19.	AGRICULTURAL MARKETING
20.	EMPLOYMENT PATTERN IN INDIA
21.	DISINVESTMENT
22.	MAKE IN INDIA
23.	DIGITAL INDIA
24.	SWACH BHARAT ABHIYAN
25.	PRADHAN MANTRI GRAM SADAK YOJNA
26.	VALMIKI AMBEDKAR AWAS YOJNA
27.	PRADHAN MANTRI JAN DHAN YOJNA
28.	START UP INDIA SCHEME
29.	MID DAY MEAL SCHEME
30.	DEENDAYAL ANTAYODAYA YOJANA
31.	COMPARATIVE DEVELOPMENT EXPERIENCE OF INDIA AND CHINA
32.	COMPARATIVE DEVELOPMENT EXPERIENCE OF INDIA AND PAKISTAN
33.	CREDIT CREATION BY COMMERCIAL BANKS
34.	FUNCTIONS OF CENTRAL BANK
35.	MONETARY POLICY COMMITTEE
36.	MONEY
37.	PROBLEMS OF EXCESS DEMAND AND DEFICIENT DEMAND
38.	GOVERNMENT BUDGET

39.	DETERMINATION OF FOREIGN EXCHANGE RATE
40.	BALANCE OF PAYMENT
41.	GROSS DOMESTIC PRODUCT
42.	CIRCULAR FLOW
43.	WORKING OF INVESTMENT MULTIPLIER

TOPICS FOR THE ECONOMICS PROJECT: