Delhi Public School, Bhilai

First Terminal Examination 2021

(18 September 2021)

Class: 11
MM: 80

Subject: English (Core)
Duration: 3 Hours

General Instructions

- *The paper consists of eight printed pages.*
- *There are two parts: A and B. Both the parts are compulsory.*
- *Part A consists of only multiple-choice questions.*
- *Write only the closest / best answer to a multiple-choice question.*
- *Specific instructions, wherever necessary, are given. Follow them strictly.*
- *Read the division of the marks as "number of question(s)×mark(s)=total."*

PART A (40 MARKS)

READING (18 MARKS)

I. Read the following passage and answer the questions that follow it:

1.   The emergence of management as an essential institution is a pivotal event in social history. Rarely, if ever, has a new basic institution emerged as fast as management has since the turn of this century. In this regard, Drucker observes that management has become indispensable quickly since its arrival with little opposition or disturbance.

2.   Despite its crucial importance, high visibility, and spectacular rise; management is the least known, as also the least understood, of our basic institutions. For management is the economic organ of an industrial society, and organs can be described and defined only through their functions. Going by that, the ultimate test of management is business performance. Management, in other words, is a practice, rather than a science or a profession, though containing elements of both.

3.   Management is responsible for making a productive enterprise out of human and material resources. The enterprise cannot, therefore, be a mechanical assemblage of resources. What is needed is a transmutation of the resources. And this cannot come from an inanimate resource such as capital. It requires management.

4.   Management has to manage workers and work. Work has to be performed, and the resource to perform it with is workers—ranging from totally unskilled people to artists, from wheelbarrow pushers to executive vice presidents. This implies organization of the work (so as to make it most suitable for human beings) and organization of the workers (so as to make them work most productively and effectively).

5.   Automation cannot replace managers. New technology will not render managers superfluous or replace them by mere technicians. On the contrary, it will demand many more managers. It will greatly extend the management area. Several people now considered the rank and file, therefore, will have to become capable of doing management work. The great majority of technicians will have to be able to understand what management is and see things managerially. The demands on the manager's responsibility, vision, ability to manage workers and work, and competence in making decisions will greatly increase.

6.   Managing a business must always be entrepreneurial in character. It cannot be a bureaucratic, an administrative, or even a policy-making job. It must be a creative rather than an adaptive task. The more a management creates economic conditions or changes them rather than passively adapts to them, the more it manages the business.

[PTO]

7.   One of the key tenets of good management is to balance short- and long-term needs. A management problem is not solved if immediate profits are purchased by endangering the long-range profitability (perhaps even the survival) of the company. A management decision is equally irresponsible if it risks disaster this year for the sake of a grandiose future.

On the basis of your understanding of the above passage, answer ANY TEN of the following questions:

                                                                    10×1 = 10

a. Managing a business must always be

(1) a bureaucratic job.   (2) an entrepreneurial job.
(3) an administrative job.   (4) a policy-making job.

b. The transmutation of resources requires

(1) an inanimate thing.   (2) capital.
(3) management.   (4) force.

c. Management, according to the author, is

(1) only a science.   (2) basically a practice.
(3) only a profession.   (4) neither a science nor a practice.

d. Management must be

(1) an adaptive task.   (2) a mechanical task.
(3) everything but creative.   (4) a creative task.

e. Management is about

(1) only work.   (2) only workers.
(3) neither work and workers.   (4) both work and workers.

f. Automation

(1) will replace managers.   (2) will demand more managers.
(3) will render managers superfluous.   (4) will make managers useless.

g. Automation will affect the manager's

(1) vision alone.   (2) responsibility alone.
(3) competence alone.   (4) vision, responsibility, and competence.

h. Of all the basic institutions, management is

(1) the most understood.   (2) the least understood.
(3) the most known.   (4) the least important.

i. Of an industrial society, management is

(1) the bureaucratic organ.   (2) the political organ.
(3) the politico-economic organ.   (4) the economic organ.

j. In paragraph 5, *rank and file* means

(1) an examination rank kept in a file.   (2) a cutting device.
(3) the employees of an organization who are not leaders.   (4) decision makers.

[PTO]

k. In paragraph 7, *grandiose* means

(1) seemingly impressive, but not practical.
(3) a great diocese.

(2) a kiosk.
(4) granny.

II. Read the following passage and answer the questions that follow it:

Since 1820, the United States has admitted almost twice as many immigrants and refugees as all other countries combined. The number of legal immigrants (including refugees) has varied during the different periods because of the changes in the immigration laws and the rates of the economic growth. Currently, immigration (legal and illegal) accounts for about 40% of the country's annual population growth.

Between 1820 and 1960, most legal immigrants to the United States came from Europe. Since 1961, most such immigrants have come from Latin America (53%) and Asia (25%), followed by Europe (14%). In 2007, the Latinos (67% of them from Mexico) made up 15% of the US population, and by 2050, are projected to make up 25% of it. According to the Pew Hispanic Center, 53% of the 100 million Americans that were added to the population between 1967 and 2007 were either immigrants or their children.

There is a controversy over whether to reduce legal immigration into the United States. Some analysts approve of new entrants only if they can support themselves (arguing that providing legal immigrants with public services makes the United States a magnet for the world's poor). The proponents of reducing legal immigration argue that the latter will allow the United States to stabilize its population sooner and help it reduce its enormous environmental impact.

Polls show that almost 60% of the US public strongly support reducing legal immigration. There is also an intense political controversy over what to do about illegal immigration. In 2007, there were almost 11.3 million illegal immigrants in the United States, with about 58% of them from Mexico and 22% from the other Latin American countries.

Those opposed to reducing the current rate of legal immigration argue that it will diminish the historical role of the United States as a place of opportunity for the world's poor and oppressed and as a source of cultural diversity, which has been a hallmark of American culture since its beginnings. In addition, according to several studies, including a 2006 study by the Pew Hispanic Center, the immigrants and their descendants pay taxes, take many menial and low-paying jobs (which most other Americans shun), start new businesses, create jobs, add cultural vitality, and help the United States succeed in the global economy. Also, according to the US Census Bureau, after 2024, higher immigration levels will be needed to supply enough workers as baby boomers retire.

According to a recent study by the UN Population Division, if the United States wants to maintain its current ratio of workers to retirees, then it will need to absorb an average of 10.8 million immigrants every year—more than 13 times the current immigration level—through 2050. At that point, the US population will total 1.1 billion people, 73% of them fairly recent immigrants or their descendants. Housing this influx of almost 11 million immigrants a year will require the equivalent of building another New York City every 10 months.

On the basis of your understanding of the above passage, answer ANY EIGHT of the following questions.
$8 \times 1 = 8$

a. Through 2050, the USA will need to absorb _____ immigrants every year.

(1) 10.8 pillion   (2) 1.08 million   (3) 10.8 billion   (4) 10.8 million

b. The equivalent of building another New York City will be required

(1) every 10 years.   (2) every 10 months.   (3) every 10 weeks.   (4) every 10 days.

c. Since 1961, the legal Asian and the European immigrants have accounted for

(1) 14%.   (2) 39%.   (3) 25%.   (4) 58%.

d. In 1861, most legal immigrants were from

(1) Africa.   (2) Latin America.   (3) Europe.   (4) Asia.

e. By 2050, _____ will make up 25% of the US population.

(1) the Latinos   (2) the Africans   (3) the Europeans   (4) the Asians

f. The US public who do not strongly support reducing legal immigration account for

(1) 40%.   (2) 22%.   (3) 53%.   (4) 60%.

g. In 2007, the illegal Mexican immigrants were

(1) 15%.   (2) 58%.   (3) 67%.   (4) 22%.

h. Which of the following statements is not according to the Pew Hispanic Center's 2006 study:

(1) The immigrants and their descendants pay taxes.
(2) The immigrants and their descendants do not take menial and low-paying jobs.
(3) The immigrants and their descendants start new businesses.
(4) The immigrants and their descendants add cultural vitality.

i. As baby boomers retire, _____ immigration levels will be needed.

(1) highest   (2) lowest   (3) lower   (4) higher

GRAMMAR (8 MARKS)

III. Choose the appropriate option to fill in each of the blanks. Attempt ANY FOUR.   4×1=4

a. He told her in the last meeting that she _____ made numerous mistakes.

(1) has   (2) can be   (3) had   (4) could

b. He _____ two sisters, who take care of him.

(1) is having   (2) has   (3) was having   (4) had

c. Unless she _____ hard, she cannot pass this examination.

(1) will work   (2) worked   (3) works   (4) is working

d. It _____ raining since 15 September 2021.

(1) is   (2) is being   (3) was   (4) has been

e. Give me _____ milk you have.

(1) the little   (2) a little   (3) the few   (4) a few

IV. Put in the right order the sentences of each group to make a sensible paragraph. Attempt ANY FOUR.   4×1=4

a. i.   She opened the box a little.
   ii. Hermes left a box at Pandora's house.
   iii. A swarm of ugly creatures flew out of it.
   iv. Pandora, however, could not resist her urge.
   v.   He forbade Pandora to open the box.

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

b. i.   They promised them that they would never return home late.
   ii. Tom and Lucy apologized to their parents for their late return.
   iii. They had gone out to enjoy themselves.
   iv. Their parents breathed a sigh of relief when they saw them back home.
   v.   Tom and Lucy got back home extremely late.

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

c. i.   We should put a bell around its neck.
   ii. It, therefore, easily catches one of us.
   iii. We can, then, easily run for cover.
   iv. The cat makes no noise when it comes.
   v.   We can, thus, hear the bell when it comes.

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

d. i.   The fruit grows larger and larger until it is ripe.
   ii. First of all, you see blossoms on its branches.
   iii. People, then, eat it with great relish.
   iv. Then, after a few days, fruit begins to grow.
   v.   Watch a fruit tree in the spring season.

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

e. i.   Within half an hour, Tony's mother was right in front of him and his teacher.
   ii. Miss Belinda, the teacher, knew that Tony had told her lies.
   iii. He burst into tears and promised that he would never tell lies.
   iv. She, therefore, called up his mother.
   v.   Now, Tony was in big trouble, as he had no explanations.

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

LITERATURE (14 MARKS)

V. Choose only ONE of the following extracts and answer the questions based on it: 3×1=3

Extract 1

> And the sea, which appears to have changed less,
> Washed their terribly transient feet.

a. The thematic contrast in the lines is between

(1) man and woman.   (2) nature and the sea.   (3) nature and human life.   (4) mother and daughter.

b. The literary device used in "transient feet" is

(1) transferred epilogue.   (2) oxymoron.   (3) alliteration.   (4) transferred epithet.

c. The poet is

(1) Shirley Tulson.   (2) Shirley Toulsen   (3) Shirley Toulson.   (4) Shirley Temple.

Extract 2

> Both wry
> With the laboured ease of loss.

a. The word *both* refers to

(1) the speaker and the mother.   (2) Betty and Dolly.   (3) the sea and the mother.   (4) the cousins.

[PTO]

b. The figure of speech reflected by *laboured ease* is

(1) allusion.   (2) oxymoron.   (3) alliteration.   (4) metaphor.

c. The literary device reflected by *laboured* and *loss* in the second line is

(1) allusion.   (2) hendiadys.   (3) alliteration.   (4) onomatopoeia.

VI. Choose any TWO of the following extracts and answer the questions based on them: 6×1=6

Extract 1

Our only hope was to reach these pinpricks in the vast ocean.

a. The vast ocean is

(1) the Pacific Ocean. (2) the Indian Ocean. (3) the Atlantic Ocean. (4) the Arctic Ocean.

b. The pinpricks are mentioned in the context of

(1) Ill Amsterdam.   (2) Amsterdam.   (3) Ile Amsterdom.   (4) Ile Amsterdam.

c. The part of the vast ocean in this account is

(1) eastern.   (2) northern.   (3) western.   (4) southern.

Extract 2

Eventually the substitute fans worked well enough to finish the procedure.

a. The procedure is related to

(1) digging.   (2) sleeping.   (3) CT scanning.   (4) cleaning.

b. The procedure was used on

(1) King Tut's coffins.   (2) King Tut's body.   (3) Amun's body.   (4) Aten's body.

c. The substitute fans were used because the following had stopped working:

(1) a ceiling fan.   (2) a table fan.   (3) an exhaust fan.   (4) a cooler fan.

Extract 3

As I walked slowly back to the station I thought about my mother . . . .

a. The mother is called

(1) Mrs S S   (2) Miss S   (3) Mrs S   (4) Miss S S

b. The speaker is walking back from

(1) Mrs Darling's.   (2) Miss Darling's.   (3) Miss Dorling's.   (4) Mrs Dorling's.

c. The author is

(1) Morga Minco.   (2) Morga Mincho.   (3) Marga Minco.   (4) Marga Moncho.

[PTO]

VII. Answer ANY FIVE of the following questions: 5×1=5

a. Mourad speaks

(1) English.   (2)Urdu.   (3) Persian.   (4) Armenian.

b. King Tut was not buried with

(1) a silver razor.   (2) board games.   (3) wine.   (4) food.

c. The author of "Discovering Tut: The Saga Continues" is

(1) R. A. Williams.   (2) A. R. Williams.   (3) S. R. Williams.   (4) R. S. Williams.

d. The name of Mourad's father is

(1) John Byro.   (2) Khosrove.   (3) Arak.   (4) Zorab.

e. Larry is asked to steer a course of

(1) 185 metres.   (2) 185 degrees.   (3) 185 inches.   (4) 185 kilometres.

f. A Mayday call is

(1) an STD call.   (2) a call in May.   (3) a distress signal.   (4) a game.

PART B (40 MARKS)

WRITING (19 MARKS)

VIII. Attempt ONLY ONE of the following questions: 1×4=4

a. You are Ankit / Ankita Nair, the principal of Manohar Public School, Bhilai 490 023. Your school is going to host an interschool music contest at senior secondary level. Write, therefore, a notice, in not more than fifty words, inviting participants from the senior secondary schools of the city.

b. You are Prabodh / Prabha Sahu, the principal of Eliot Public School, Ber Sarai, New Delhi 100 067. Your school is going to host an interschool dance contest at senior secondary level. Write, therefore, a notice, in not more than fifty words, inviting participants from the senior secondary schools of the city.

IX. Attempt ONLY ONE of the following questions: 1×5=5

a. You are Darpan / Disha Soni, the librarian of Mamoru Public School, Bhilai 490 001. You want to buy some books of English. Write, therefore, a letter in 120–150 words, to M/s Penguin Random House, Daryaganj, New Delhi 110 025, to place your order, giving all the necessary details.

b. You are Shobhit/Sukanya Tripathi and your address is B7 Vasant Vihar, Risali, Bhilai 490 006. You want to buy some stationery items. Write, therefore, a letter in 120–150 words, to M/s Stationery World, Supela, Bhilai 490 023, to place your order, giving all the necessary details.

X. Attempt ONLY ONE of the following questions: 1×5=5

a. You are Ravi Pratap / Rani Shahi and your address is 4 Tarnaka, Hyderabad 500 007. You have received the supply of the order (for books) placed with M/s Cambridge University Press, 2 Ansari Marg, New Delhi 110 025. Some of the books are, however, defective in different ways. Write, therefore, a letter, in 120–150 words to M/s Cambridge University Press, pointing out the defects and making a replacement/refund request.

b. You are Sushil / Sushila Dewangan and your address is 5 Rana Pratap Marg, Raipur 492 021. You have bought a laptop from M/s Laptop Planet, Satsang Marg, Raipur 492 001. The laptop, however, has some defects. Write, therefore, a letter, in 120–150 words to M/s Laptop Planet, pointing out the defects and making a replacement/refund request.

XI. Attempt ONLY ONE of the following questions: 1×5=5

a. You are Ramesh / Rashmi Verma, a student of class 11, at Modern Public School, Hyderabad. You have been asked to deliver a speech on the problem of unemployment in India. Write, therefore, the speech in 120–150 words.

b. You are Puru / Purnima Narlikar, a student of class 11 at M.N. Roy Public School, Kolkata. You have been asked to deliver a speech on scientific temperament. Write, therefore, the speech in 120–150 words.

LITERATURE (21 MARKS)

XII. Answer ANY TWO of the following questions, each in 30–40 words: 2×2=4

a. Why does the grandmother always accompany the child to school when they are in the village?
b. What does Howard Carter report with scientific detachment?
c. How does Aram view the stealing of a horse?
d. Why does Mrs S's daughter not want to remember Mrs Dorling's address any more? Mention two reasons.

XIII. Answer ONLY ONE of the following questions in 30–40 words: 1×2=2

a. How does Mrs Dorling's daughter treat Mrs S's daughter?
b. What does Aram's mother think of Khosrove?

XIV. Answer ONLY ONE of the following questions in 120–150 words: 1×5=5

a. "If a person does not adapt to the changes due to place and time, he or she faces emotional consequences." How does it reflect the character of the grandmother in "The Portrait of a Lady"?
b. Discuss the features that make Gordon Cook a wonderful captain.

XV. Answer ONLY ONE of the following questions in 120–150 words: 1×5=5

a. Briefly discuss the history of Egypt's eighteenth dynasty.
b. How does a strong emotional bond develop between the narrator and the grandmother in the village?

XVI. Answer ONLY ONE of the following questions in 120–150 words: 1×5=5

a. Discuss how honesty is tested in "The Summer of the Beautiful White Horse."
b. Discuss three instances of irony in "The Address."

DELHI PUBLIC SCHOOL, BHILAI

DATE : 23.09.2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours

CLASS : XI   SUBJECT : COMPUTER SCIENCE   Max. Marks : 70

General Instructions :
1. All questions are compulsory.
2. Programming language is Python.
3. Answer questions sequentially.

I.

1. What is the need for secondary memory?   1
2. What is the role of cache memory?   1
3. Add the binary numbers 01010111 and 00110101.   1
4. What is the need for RAM how does it differ from ROM.   2
5. Convert $(B2F)_{16}$ to Octal   2
6. Convert $(10.75)_8$ to $(?)_{10}$ (Upto 4 decimal spaces)   2
7. Design a logic circuit and draw its diagram for the Boolean expression : $A + BC + \overline{D}$ 2
8. State DeMorgan's laws of Boolean Algebra and verify them using truth table.

II.

1. What does a cross platform mean?   1
2. Which of the following are not valid strings in python?   1
   (a) "Hello"   (b) 'Hello'   (c) "Hello'   (d) 'Hello"   (e) [Hello]
3. How can you create multi – line strings in Python? Give example.   1
4. What is an Algorithm?   2
5. What is testing and debugging?   2
6. What are literals in Python? How many types of literals are allowed in Python?   2
7. Draw a flowchart to print Even numbers between 1 to 50.   2
8. What is the difference between an expression and a statement in Python?   2
9. What do you understand by term 'immutable'? Mention the immutable data types in Python.   2
10. Differentiate between Syntax error and Logical error in a program. When is each type of error likely to be found?   3
11. What is the difference between interactive mode and script mode in Python?   3
12. Write a code fragment to generate three random integers in the range 10,70 with a step 13. Print the set of these three numbers.   3
13. **Predict the output**   3
    (I)   >>>str(print())+"Well!"
    (II)   >>>print(print("Hello"))
    (III)   >>>x,y=20,60
           >>>y,x,y=x,y-10,x+10
           >>>print(x,y)
14. **Give the output of the following**   5
    (i)   If a=4, b=3 , c=2,
         >>>a+= b+ c
         >>>print(a)
    (ii)   >>>print(4.00/(2.0+2.0))
    (iii)   >>>print(10!=9 and 20>=20)
    (iv)   >>>print(5%10+10<50 and 29<=29)
    (v)   >>>print((0<6) or (not(10==6) and (10<0)))

III.

1. Differentiate between break and continue statements using examples.   2
2. What is a statement? What is the significance of an empty statement?   2
3. **Predict the output**   2

i)
```
for i in range(20,30,5):
        print(i)
```
ii)
```
i,sum=0,0
while i<9:
    if i%4 == 0:
        sum=sum+i
    i=i+2
print(sum)
```

4. Find the errors in the code given below and rewrite the corrected code:　　　　　　**2**

```
if n==0
    print("zero")
elif: (n==1)
    print("one")
elif
    n==2:
    print("two")
else n==3:
    print("three")
```

5. Write a program to print every integer between 1 and n divisible by m. Also report whether the number that is divisible by m is even or odd.　　**3**

6. Predict the output　　**3**

i)
```
x=1
if x>3:
    if x>4:
        print("A",end=' ')
    else:
        print("A",end=' ')
elif x<2:
    if(x!=0):
        print("C",end=' ')
print("D")
```

ii)
```
var=7
while var>0:
    print("current variable value:",var)
    var=var-1
    if var==3:
        break
    else:
        if var==6:
            var=var-1
            continue
    print("Bye!!")
```

iii)
```
j=10
while j>=5:
    print("Hello!")
    j=j-3
```

IV.

1. Differentiate partition() and split() , give examples　　**2**
2. Input a string **"Oil Conservation"**. Write python script to print the string in reverse.　　**2**
3. Give the output for lines 2 and 3　　**2**
```
>>> S= "OPPORTUNITY"      # Line 1
>>> S[ :2]                # Line 2
>>> S[ 2 :]               # Line 3
```

4. What will be the output produced by the following ?　　**3**
i)
```
>>>"One\n\tTwo Three Four\n\nFive\n".split()
```
ii)
```
>>>"-".join(["N","E","W","S"]
```
iii)
```
>>>s='987654321'
>>>print(s[-3:],s[:-3])
```

5. Suggest appropriate functions for the following tasks –　　**3**
   i) To check whether the string contains digits.
   ii) To convert the first letter of a string to upper case.
   iii) To remove all white spaces from the beginning of a string.

6. Write a program that should prompt for a phone number of 10 digits and two dashes, with dashes after the area code and next three numbers. For example ,017-555-1212　　**3**

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 23.09 .2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours
CLASS : XI   SUBJECT – BIOLOGY   Max. Marks : 70

General Instructions:
(i)   All questions are compulsory.
(ii) The question paper has four sections : Section A, Section B, Section C and Section D.
      There are 33 questions in the question paper.
(iii) Section – A has 14 questions of 1 mark each and 02 case-based questions.
      Section – B has 9 questions of 2 marks each.
      Section – C has 5 questions of 3 marks each and
      Section – D has 3 questions of 5 marks each.
(iv) There is no overall choice. However, internal choices have been provided in some
      questions. A student has to attempt any one of the alternatives in such questions.
(v)   Wherever necessary, neat and properly labelled diagrams should be drawn.

SECTION : A

Q.01 Name the type of fibres present in areolar tissues.   (1)
Q.02 What type of placentation is observed in the ovary of (i) Citrus and   (ii) Argemone   (1)
Q.03 Differentiate between polyps and medusa.(two points)   (1)

Q.04 What are corolloid roots?   (1)

Q.05 What is a staminode?   (½)

Q.06 Name the parasitic fungi on mustard.   (1)

Q.07 Give the technical terms for the fruiting bodies of (i) sac fungi and (ii) club fungi   (1)

Q.08 Arrange the following taxonomic categories in proper sequence from smaller taxon to
      higher one.
      Phylum, Genus,Class, Species,Order, Kingdom,Family   (1)

Q.09 Expand the abbreviations (i) **ICBN and**   (ii) **ICZN**   (1)

Q.10 Holdfast,stipe and frond constitute the plant body in case of
      (a)Rhodophyceae   (b)Chlorophyceae   (c)Phaeophyceae   (d) All of the above.   (1)

Direction (Q.Nos.11 - 14)
In each of the following questions,a statement of Assertion(A) is given followed by
corresponding statement of Reason (R).Of the statements,mark the correct answer as
      (a) If both A and R are true and R is the correct explanation of A.
      (b) If both A and R are true,but R is not the correct explanation of A
      (c) If A is true, but R is false.
      (d) If both A and R are false.
Q.11 **Assertion (A)** : Deuteromycetes is known as fungi imperfecti.
      Reason (R)   : In Deuteromycetes,only the asexual phase is known.   (1)

OR

      Assertion (A) : Phycomycetes are called sac fungi.
      Reason (R)   : Members of Phycomycetes are free living.
Q.12 **Assertion(A)** : In binomial nomenclature,both words are separately underlined.
      Reason (R)   : Underline indicates their Latin origin.   (1)
Q.13 **Assertion (A)** : Smooth muscles are involuntary in function.
   **Reason (R)**   : These are striated in appearance.   (1)
Q.14 **Assertion (A)** : The cymose type of inflorescence has limited growth.   (1)
      Reason (A)   : In cymose inflorescence ,the main axis terminates in a flower.

Q.15 Direction : Read the following and answer **any four** questions from 15(i) to 15(v) given below : **(4)**

Diverse group of animals have been classified into nine major phyla and eight of them are invertebrates whereas the one phylum constitutes vertebrates. The former lack a backbone whereas the latter is characterised by a backbone. However, only this difference is not sufficient to identify and classify animals into different groups. For this purpose, various other features like body cavity, symmetry, segmentation, etc. are taken into account. The level of complexity of these features complicates from lower phylums to upper phylums with few exceptions.

(i) Among the following phyla,diploblastic animals are found in

(a) Coelenterata   (b) Arthropoda   (c) Mollusca   (d) Hemichordata

(ii) In which phylum ,metameric segmentation is found?

(a) Chordata   (b) Porifera   (c) Annelida   (d) Mollusca

(iii) The type of symmetry found in arthropods is

(a) radial symmetry   (b) bilateral symmetry   (c) asymmetry   (d) biradial symmetry

(iv) All the listed organisms are coelomate,except

(a) Unio   (b) Scolopendra   (c) Pheretima   (d) Wuchereria

(v) With respect to the following diagram,choose the correct statements.
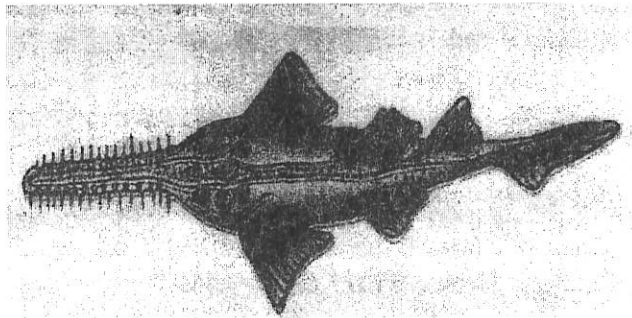
(I)   It swims constantly due to the absence of air bladder.
(II)   It is commonly called Saw fish.
(III)   Body is covered by placoid scales.
(IV)   It possesses poison sting.

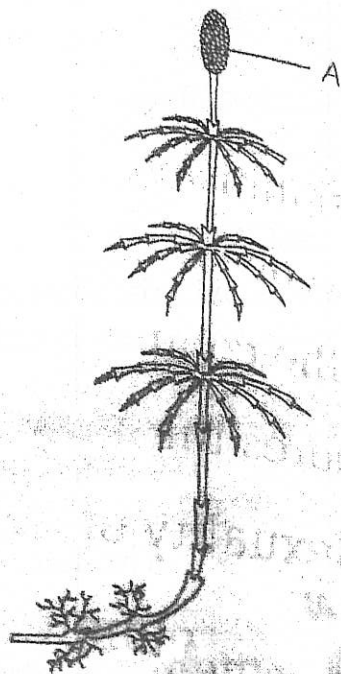(a) I,II and III.   (b) II and IV   (c) II,III and IV   (d) I,II,III and IV

Q.16 Direction : Read the following and answer **any four** questions from 16(i) to 16(v) given below:. **(4)**

Pteridophytes are primitive seedless vascular plants. They are called cryptograms. These shade loving plants are few centimetres to 20 metres long. The plant body of pteridophytes is differentiated into true roots, stem and leaves which are either small or large. They also possess well-differentiated vascular tissues, i.e. xylem and phloem. Most of the pteridophytes are homosporous with few exceptional heterosporous species. The sporophyte produces spores and gametophyte bears antheridia and archegonia.

(i) An aquatic pteridophytes is

(a) Equisetum.   (b) Salvinia   (c) Dryopteris.   (d) All of these

(ii) Macrophylla are found in

(a) Dryopteris.   (b) Selaginella   (c) Equisetum.   (d) Both (a) and (b)

(iii) Selaginella possesses

(a) strobili   (b) heterospores   (c) sporophytic plant body   (d) All of the above

(iv) The prothallus of pteridophyte is

(a) single celled   (b) big celled   (c) multicellular   (d) parasitic

(v) Identify the incorrect characteristics about the plant species shown in diagram

(I) Structure A represents antheridium.

(II) It is commonly called horsetail pteridophyte.

(III) The leaves are microphyllus.

(IV) The shoot are dimorphic,i.e.vegetative and fertile.

Codes

   (a) Only II.   (b) I and III   (c) only IV   (d) III and IV

SECTION-B

Q.17 What is heterospory? Briefly comment on its significance .   (2)

OR

Both bryophytes and pteridophytes require water for fertilization ; yet they differ from each other in many aspects. Differentiate between the two.(four points)

Q.18.(i) Which class of chordates possess sucking and circular mouth without jaws?

(ii) What is the role of radula in mollusca?   (2)

Q.19 Epithelium is the tissue covering the exposed external and internal lining of the body cavity. Blood vessels, lymph vessels, glands and their ducts are derived from the epithelium. Name the epithelium present in the wall of blood vessels. Draw its labelled diagram.   (2)

OR

Give the location and function of Areolar tissue. Mention the cell types of this tissue.

Q.20 Name the photosynthetic groups of kingdom Protists. Which group of them constitute phytoplanktons in the oceans?   (2)

Q.21 Growth cannot be taken as a defining property of living organisms.Justify the statement. (2)

Q.22 Provide appropriate technical term for the following:-.   (2)

(a) Stinging organ of jelly fishes

(b) Lateral appendages in aquatic annelids.

Q.23 Write the floral formula of an actinomorphic, bisexual, hypogynous flower with five united sepals, five free petals, five free stamens and two united carpels with superior and axile placentation.   (2)

Q.24 Analyse why algal blooms and red tides are considered harmful for the environment? (2)

Q.25 Give the scientific terms for the following:-.   (2)
   (i)   Flower with bilateral symmetry
   (ii) Flower with appendages in multiple of three.
   (iii) Flower with irregular symmetry.
   (iv) Stamens with (9)+1 condition.

SECTION –C

Q.26 Classify the three types of cell junctions and write about each. (3)

Q.27 Define aestivation. Which type of aestivation is seen in China rose, Calotropis Gulmohar and Pea? (3)

Q.28 Differentiate between green algae and brown algae. (3)

Q.29.(i) Which phylum 'comb jellies' belong to? What another name is given to them?
   (ii) Why are animals of phylum Aschelminthes called roundworms?
   (iii) Name the respiratory and excretory organs in mollusc. (3)

Q.30 Draw a neat labelled diagram of a Bacteriophage (four labellings). Name the genetic material present in bacteriophage. Is it a double stranded or single stranded? (3)

SECTION-D

31.(a) Mention two similarities between :   (5)
      (a)Aves and mammals (b) A frog and crocodile (c)A turtle and Pila

   (b) Draw a labelled diagram to show the chordate characteristics.

OR

Draw labelled diagrams of sectional view of different types of body cavities found in animals. Give one example for each type.

Q.32 Describe the arrangement of floral members in relation to their insertion on thalamus with labelled diagrams. (5)

OR

Describe the various types of placentations found in flowering plants with neat labelled diagrams.

Q.33 Name three groups of plants that bear archegonia. Describe diagrammatically the life cycle of any one of them. (5)

OR

The diagram represents the representative plants of liverworts group.
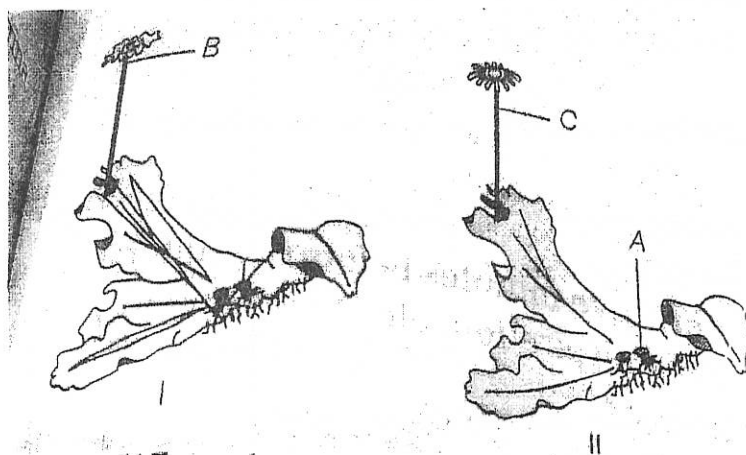
   (i)   What does the structure A called? Also mention the characteristic feature and function of A.
   (ii) Diagram I and II represent male and female thallus. Identify the structures labelled as B and C.
   (iii) Tabulate atleast six differences between liverworts and mosses.

DELHI PUBLIC SCHOOL, BHILAI

DATE : 23.09 .2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours

CLASS : XI   SUB. – ECONOMICS   Max. Marks : 80

General Instructions :-
* All questions in both the sections are compulsory. There are internal choices in questions of 1 mark, 3 marks, 4 marks and 6 marks.
* Questions nos. 1 – 10 and 18 – 27 are objective type questions carrying 1 mark each.
* Question nos. 11 – 12 and 28 – 29 are short answer type of questions carrying 3 marks each.
* Question nos. 13 – 15 and 30 – 32 are also short answer questions carrying 4 marks each.
* Question nos. 16 – 17 and 33 – 34 are long answer questions carrying 6 marks each.

PART – A

Q1. In which process, raw material is converted into end products having utility ?   (1)
    (a) consumption   (b) production   (c) investment   (d) exchange

Q2. Statistics facilitates   (1)
    (a) comparison of data (b) collection of data (c) organization of data (d) disposal of data

Directions : Read the following paragraph carefully and answer the questions (3-6) on the basis of same.

You are Rakesh, an investigator who wish to conduct a survey to study the smoking behavior of college students. For this reason, you prepared a questionnaire based upon the objective of the survey and keeping in mind the size of the target group, trained 5 people along with you to complete the survey. Your target group comprised of 1,500 students across 10 different colleges. You followed methods of statistics to ensure the accuracy of the data.

Q3. Which of the following source of data is referred in the above situation?   (1)
    (a) Primary data   (b) Secondary data   (c) Internal data   (d) None of these

Q4. The person who helps the investigator in collecting information is known as _____   (1)
    [enumerator/respondent]

Q.5. Which method of collecting primary data will be most suitable in the above situation ?   (1)
    (a) Direct personal Investigation   (b) Indirect Oral investigation
    (c) Information through local correspondents (d) None of these

Q.6 Most important step to be followed after preparing the questionnaire will be _____.   (1)

Q7. Write the correct sequence options in column II by matching them with options of column I   (1)

COLUMN I	COLUMN II
A. Classification of data on time	I. Spatial
B. Classification based on qualities	II. Quantitative
C. Classification based on numerical values	III. Chronological
D. Classification based on location	IV. Qualitative

Q8. A continuous variable can take   (1)
    (a) integral values   (b) discrete values   (c) both (a) and (b)   (d) none of these

Q9. Width of bars in a bar diagram need not be equal. (True / False)   (1)

Q10. Write the formula of arithmetic mean in discrete series by short cut method.   (1)

OR

What do you mean by complex table ?

Q11. Convert the following into a more- than series:-   (3)
    5 students get less than 3 marks, 12 students get less than 6 marks, 25 students get less than 9 marks, 30 students get less than 12 marks.

Q12. Distinguish between classification and tabulation.   (3)

OR

Prepare a blank table to show distribution of population according to age and income for a particular year.

Q13. Represent the following data by an appropriate bar diagram :-   (4)

Import and Export of India

Year	Import (in crore)	Export (in crore)
2002-03	130	110
2003-04	150	130
2004-05	170	140

OR

Prepare a Pie-diagram to show the percentage distribution of exports :-

Country :-	USA	Japan	UK	China	India
Export (in %) :-	25	15	30	20	10

Q14. What are the precautions that must be kept in mind while using secondary data ? (4)

Q15. Discuss the role of statistics in economic planning. (4)

Q16. Distinguish between census method and sampling method. (6)

OR

Distinguish between primary data and secondary data.

Q17. Calculate arithmetic mean with the help of the following data using step deviation Method. (6)

Marks :-	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Frequency :-	3	7	10	5	3	2

PART – B

Q18. Utility analysis is criticized for one of its assumption. According to this, utility can be expressed in terms of (1)

(a) cardinal number   (b) ordinal number   (c) both (a) and (b)   (d) none of these

Q19. Preferences are called monotonic when .... (more units are preferred over less units\less units are preferred over more units) (1)

Q20. Write the correct sequence of options in column II by matching them with options of Column. (1)

	Column I		Column II
A.	Normal goods	(i)	Its demand has an inverse relation with income
B.	Inferior goods	(ii)	its demand is not affected by change in price
C.	Giffen goods	(iii)	Its demand is inversely related with its price
D.	Necessities	(iv)	its demand is directly related with price

Codes	A	B	C	D		A	B	C	D
(a)	i	ii	iii	iv	(b)	ii	iii	iv	i
(c)	iii	I	iv	ii	(d)	iii	iv	i	ii

Q21. Give two examples of microeconomic studies. (1)

Q22. In economics scarcity refers to a situation in which: (1)

(a)Demand exceeds supply (b)supply exceeds demand (c)demand equals supply (d)Both (a) and (b)

Q23. Who is the father of economics? (1)

(a) Karl Marx   (b) J.M. Keynes   (c) Adam Smith   (d) Alfred Marshall

Q24. Law of demand holds true for every type of goods.(True \ False) (1)

OR

Ignorance may lead to failure of law of demand. (True \ False)

Q25. Indifference curve may touch either axis. (True \ False) (1)

Q26. Write the correct pair. (1)

Column I	Column II
(a) Market economy	(i) Private ownership
(b) Socialist economy	(ii) coexistence of private and public sector
(c) Mixed economy	(iii) Authorised central authority

Q27. Define budget line. (1)

Q28. Explain the central problem of 'choice of technique". (3)

Q29. Why a higher indifference curve in an indifference map represents higher level of satisfication? (3)

OR

Explain the concept of marginal rate of substitution with the help of a numerical example.

Q30. Given the price of a good, how will a consumer decide as to how much quantity of that good to buy? Use utility analysis. (4)

Q31. How does the budget line change, if the price of Good 2 decrease by a rupee but the price of Good 1 and the consumer's income remain unchanged. (4)

Q32. Distinguish between normal good and inferior good. (4)

OR

Distinguish between Budget line and budget set.

Q33. Explain with the help of diagram, the effect of the following changes on the demand for a commodity. (6)

(i) A fall in the price of complementary good (ii) A rise in income of the buyer in case of inferior good

Q34. Explain the conditions of consumer's equilibrium with the help of indifference curve analysis. Use diagram. (6)

OR

How a consumer will reach to equilibrium point, if the market rate of exchange is not equal to MRS?

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 14.09 .2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours

CLASS : XI   SUB. – ACCOUNTANCY   Max. Marks : 80

GENERAL INSTRUCTIONS:

(1) This question paper contains 29 questions.

(2) Each question carries marks indicated against it.

(3) All parts of a question should be attempted at one place.

(4) Please write down the serial number of the question number before attempting it.

1. Mr. Jitendra, an electronic goods dealer, gifted a TV of value of ₹ 45,000 to his friend Mr. Madan. It will be recorded in the books as:
   (a) Expenses   (b) Capital   (c) Drawings   (d) Sales   (1)

2. Which of these is not a business transaction?
   (a) Bought goods of ₹ 15,000 from Anant on credit.
   (b) Paid domestic electricity bill of ₹ 5,000 by cheque from savings bank account.
   (c) Paid wages to a casual labourer for repairing work of the shop.
   (d) Paid wife's jewellery bill of ₹ 1,15,000 by cheque from current account.   (1)

3. During life time of an entity, accounting produce financial statements in accordance with which of the following basic accounting principles:
   (a) Accounting Period Principle   (b) Matching Principle
   (c) Conservatism Principle   (d) Revenue Recognition Principle   (1)

4. Management concealing important financial information, violates the .... Principle.
   (a) Materiality   (b) Consistency   (c) Money Measurement   (d) Full Disclosure   (1)

5. Identify the wrong statement in the context of the following statement:
   "M/s Ramprasad & Sons repaid their Bank Loan of ₹ 75,000."
   (a) Assets will increase by ₹ 75,000.   (b) Liabilities will decrease by ₹ 75,000.
   (c) Owner's Equity will decrease by ₹ 75,000.   (d) There will be no effect on Owner's Equity.   (1)

6. Amount withdrawn by proprietor for his personal use will result into:
   (a) Increase in cash and capital.   (b) Decrease in cash and capital.
   (c) Increase in cash and decrease in capital.   (d) Decrease in cash and increase in capital.   (1)

7. Goods returned to supplier will be evidenced by:
   (a) Debit Note   (b) Credit Note   (c) Invoice   (d) Cash Memo   (1)

8. Raghav, the accountant of M/s Anirudh Agri Equipment, has prepared the following voucher:

M/s Anirudh Agri Equipment **Saurabh Nagar, Korba (C.G.)**		
Voucher No. 17		Date: 25.01.2021
Credit: Sales A/c		50,800
(Being the goods sold for cash vide Cash Memo No. 23.)		
	Total	50,800
		Sd/-
Sd/-		Accountant
Manager		

   The above voucher prepared by Raghav is:
   (a) Transfer Voucher   (b) Cash Memo   (c) Debit Cash Voucher   (d) Credit Cash Voucher   (1)

9. Raman, who owed ₹ 20,000, became insolvent. 65 Paise in a rupee could be received from his estate. Bad Debts Account will be:
   (a) Debited by ₹ 13,000.   (b) Credited by ₹ 13,000.   (c) Debited by ₹ 7,000.   (d) Credited by ₹ 7,000.   (1)

10. The following Journal Entry was passed in the Journal:

    Interest on Loan A/c   Dr.   1,500
        To Outstanding Interest on Loan A/c   1,500
    (Being interest on loan due but not paid.)

    In the above entry, Outstanding Interest on Loan Account has been credited because of:
    (a) Increase in Income Account.   (b) Increase in Liability Account.
    (c) Decrease in Expense Account.   (d) Decrease in Asset Account.   (1)

11. Which of the following Accounts will have a debit balance?
    (a) Furniture Account
    (b) Loan from Bank Account
    (c) Capital Account
    (d) Advance Commission Account   (1)

12. Which of the following ledger account balance will not be carried forward to next year?
    (a) Building Account (b) Creditors Account (c) Prepaid Rent Account (d) Trade Expense Account   (1)

13. Drawings Account is :
    (a) An Expense Account (B) A Real Account   (c) A Personal Account   (d) An Asset Account   (1)

14. Sales Account is a .... Account and has a credit balance.
    (a) Personal   (b) Revenue   (c) Liability   (d) Capital   (1)

15. Balance in Petty Cash Book is:
    (a) An asset   (b) An expense   (c) An income   (d) A profit   (1)

16. Which of the following transactions will not be recorded in the Cash Book?
    (a) Cheque issued to Raman.   (b) Cheque of Raman deposited into Bank.
    (b) Cheque of Raman returned dishonoured by Bank. (d) Cheque of Raman endorsed to Ranjan.   (1)

17. State meaning of the following:
    (a) Compound Voucher   (b) Invoice   (c) Pay-in-Slip   (3)

18. Distinguish between Journal and Ledger on the basis of (a) Nature of Book; (b) Basis for Preparation; and
    (c) stage of Recording.   (3)

19. Develop an Accounting Equation from the following transactions:
    (i)   Raunak started business with cash ₹ 36,000.
    (ii) Purchased goods for cash ₹ 10,000 and on credit ₹ 14,000.
    (iii) Sold 50% of the above goods at a profit of 25% on cost.
    (iv) Rent paid ₹ 4,000 and Rent Outstanding ₹ 2,000.   (4)

20. Mr. Gyani started business of shoes manufacturing with an initial investment of ₹ 20,00,000. He took a
    long-term loan from bank and purchased Machinery of ₹ 8,00,000 and Leather of ₹ 5,00,000 and kept
    ₹ 2,00,000 as working capital in his bank account. He started manufacturing shoes and opened a retail
    outlet at the factory gate for which he purchased Furniture of ₹ 2,00,000; Computer of ₹ 50,000 and a
    delivery van of ₹ 1,80,000. He manufactured shoes of ₹ 6,00,000 and displayed them in the outlet. He sold
    some of the shoes costing ₹ 2,00,000 for ₹ 3,20,000 in cash and costing ₹ 1,60,000 to Srijan for ₹ 2,80,000
    on credit. He paid salary to staff of ₹ 50,000 and paid electricity bill of the outlet ₹ 15,000. He received a
    large order of ₹ 10,00,000 from Liberty Shoes Co. for which he purchased raw material of ₹ 4,00,000 from
    Ayush on credit. Supplied the shoes to Liberty Co. vide Sale Invoice No. 540. Liberty Co. promised to pay
    the amount within 2 weeks.
    From the above, answer the following questions:
    (i)   Amount taken as loan from bank by Gyani is ....
          (a) ₹ 8,00,000   (b) ₹ 5,00,000   (c) ₹ 13,00,000   (d) ₹ 15,00,000
    (ii) Which of the following assets of Mr. Gyani is not a fixed asset?
          (a) Machinery   (b) Computer   (c) Raw Material   (d) Delivery Van
    (iii) Amount receivable from Debtors by Mr. Gyani is ₹ ....
    (iv) Amount of Indirect Expenses paid by him ₹ ....   (1×4=4)

21. Calculate the amount of External Equities as on 31st March, 2021 in the following cases:
    (i)   On 31st March, 2021, total assets, capital and cash balance were ₹ 15,00,000; ₹ 10,50,000 and
          ₹ 1,50,000 respectively.
    (ii) On 31st March, 2020, Yogi started business with a capital of ₹ 3,00,000 and a loan of ₹ 3,00,000
          borrowed from a friend. During the year, he earned a profit of ₹ 1,50,000; introduced an additional
          capital of ₹ 1,80,000 and had withdrawn ₹ 90,000 for his personal use. On 31st March, 2021 total
          assets were ₹ 15,00,000.   (2+2 = 4)

22. On which side will the increase in the following accounts be recorded? Also mention the nature of the
    account on the basis of modern classification of Accounts:
    (a) Carriage Inwards Account   (b) Rent Received Account
    (c) Interest Payable Account   (d) Accrued Commission Account   (4)

23. Mention the Subsidiary Books in which the following transactions will be recorded:
    (i)   Cheque issued to Aman, a supplier of goods, as advance against the order placed for supply of 25
          Desks of ₹ 3,000 each less 10% Trade Discount. Goods not yet delivered by Aman.
    (ii) Sold to Bhavna of Bhilai vide Cash Memo No. 54: 15 Plastic Chairs of ₹ 450 each and 20 Stools of
          ₹ 190 each less 10% Trade Discount.
    (iii) Goods lost by fire of ₹ 50,000. Insurance Company admitted a claim of 80%.
    (iv) Received credit note from M/s Ajay & Bros. alongwith goods of the list price ₹ 8,000 which were
          supplied to them at a Trade Discount of 5%.   (4)

24. Samir, the accountant of M/s Ranjan Oil Mills, Bilaspur, maintains the books of accounts of following the Double Entry System of Accounting. For a transaction of sale of goods of ₹ 50,000, he recorded cash received in the Cash Book, but he left decrease in the Stock unrecorded in the ledger. The company charges depreciation on fixed assets by using written down value method. Samir wants to depreciate the fixed assets this year by straight line method which is equally acceptable. Due to an accident on 20ᵗʰ February, 2021, the vital machinery of the company damaged completely. This had an adverse effect on its production capacity. As a result, the competitors are likely to take advantage and capture the market. The company has not disclosed this fact in its annual report for the year ended 31ˢᵗ March, 2021. On 25ᵗʰ February, 2021, the company purchased a new machine of ₹ 8,00,000 and paid ₹ 10,000 towards its loading, unloading and transportation. The machine was installed on 25ᵗʰ March, 2021 by incurring an expenditure of ₹ 15,000. At the end of the year, the value of this machine came down to ₹ 7,50,000 in the market.

After reading the above, answer the following questions:

(i) Quote the sentence which explains that Samir has not followed Dual Aspect Principle.

(ii) Which principle of Accounting is not complied with by not showing reason of adverse effect on production capacity?

(iii) According to Cost Concept, the Machine should be shown in the Balance Sheet at:

(a) ₹ 7,50,000   (b) ₹ 8,25,000   (c) ₹ 8,10,000   (d) ₹ 7,75,000

(iv) If Samir changes method of depreciation on fixed assets without stating the change of policy in the notes below the Balance Sheet, which principle of accounting he will violate?   (1×4=4)

25. Harish, a small shopkeeper provides you the following information about his income and expenses for the year ended 31ˢᵗ March, 2021:

	₹
Cash Sales	1,00,000
Credit Sales	2,00,000
Expenses Paid	1,60,000
Expenses Paid in Advance (included in ₹ 1,60,000)	40,000
Expenses not yet Paid	20,000
Income Received	2,40,000
Income Received in Advance (included in ₹ 2,40,000)	30,000
Income not yet Received	24,000

Determine his income if he adopts (i) Cash Basis of Accounting; and (ii) Accrual Basis of Accounting.   (6)

26. Accounting is defined as a process which starts with identification of financial transactions and events which can be measured in terms of money and are related with the business. You are required to explain the remaining steps involved in the process of accounting.   (6)

27. During the month of April, 2021 M/s Anand and Sons, Durg, dealer of Electric Hardware, had the following transactions of Purchases made by them:

2021

April, 1   Purchased goods from S.K. Nath and Bros., Bhubaneswar:
100 Philips Tube lights @ ₹ 200 each.
500 Crompton LED Bulbs @ ₹ 100 each
Trade Discount 10% and freight Charges ₹ 500.

April, 6   Purchased from Maniraj Singh of Durg 200 Havel's Tube Lights @ ₹ 180 each less 10% Trade Discount and 2% Cash Discount terms and availed both the discounts.

April, 14   Purchased goods from Vinay Enterprises, Raipur:
25 Heaters @ ₹ 800 each
15 Usha Fans @ ₹ 1,600 each
Trade Discount 10%
Packing Charges ₹ 200.

April, 20   Purchased from M/s Compu World, Bhilai for office use:
Laptop of HP of ₹ 50,000.
Laser Printer of Canon of ₹ 15,000.

April, 26   Purchased from Muni Electricals, Bilaspur:
15 Dozen Philips Bulbs @ ₹ 100 each
240 Power Plugs @ ₹ 300 per Dozen
Trade Discount 10%.
Freight Charges ₹ 250.

You are required to prepare their Purchases Book with the help of the above transactions.   (6)

28. Journalise the following transactions:
    (a) Goods costing ₹ 5,000 (Selling Price ₹ 6,500) given away as charity.
    (b) Sold goods to Swaroop of ₹ 1,00,000 payable 25% by cheque at the time of sale and balance after 30 days of sale.
    (c) Received ₹ 9,750 from Mehak in settlement of his account of ₹ 10,000.
    (d) Received dividend of 60 paise in a rupee from the official receiver of Rajan, who owed us ₹ 10,000.
    (e) Charge interest on drawings ₹ 1,500.
    (f) Sold goods to Shivani costing ₹ 40,000 for cash at a profit of 20% on cost price less 20% trade discount and 5% cash discount.
    (g) Placed an order with Rahul for supply of goods of the list price of ₹ 1,00,000. In this connection, paid 10% of the list price as an advance by cheque.
    (h) Paid income tax ₹ 15,000. (8)

29. M/s Hari Ram & Sons, Bilaspur has provided you the following transactions:

2021		₹
June, 1	Cash Balance	50,000
	Bank Balance	1,75,000
June, 3	Discounted a Bill of Exchange @ 1% from Bank	10,000
June, 5	Cash Received from sale of personal car and deposited in firm's Bank Account	50,000
June, 6	Cheque received for sale of goods and deposited into bank	50,000
June, 10	Paid Mohan by cheque	1,25,000
	Discount received	2,000
June, 14	Purchased goods from Amit	18,000
June, 15	Paid salaries by cheque	30,000
June, 18	Received a cheque from Shyam and endorsed the same to Amit in full settlement	17,500
June, 20	Received a cheque from Vimal	60,000
June, 21	Sold goods to Suman	22,000
June, 23	Drawn from Bank	50,000
June, 26	Paid wages in cash	4,000
June, 28	Sold goods in cash and banked the same	80,000
June, 29	Paid rent by cheque	10,000
June, 30	Deposited all cash in bank in excess of minimum cash balance	15,000

Prepare Two-Column Cash Book from the above transactions and show your workings clearly. (8)

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 14.09.2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours

CLASS : XI   SUB. – PHYSICS   Max. Marks : 70

General Instruction –
- All questions are compulsory. There are 33 questions in all.
- This question paper has five section : A, B, C, D & E
  - Section A : contains 10 very short answer questions and four assertion reasoning MCQs of 1 mark each.
  - Section B : has two case based questions of 4 marks each.
  - Section C : contains nine short answer questions of 2 marks each.
  - Section D : contains 5 short answer questions of 3 marks each and
  - Section E : contains three long answers questions of 5 mark each
- There is no overall choice. However internal choice is provided. You have to attempt only one of choices in such questions.

SECTION : A

Q.1 Write dimensional formula of (a) universal gravitational Constant
(b) Planck's Constant.   **(1)**

Q.2 State Principle of homogeneity.   **(1)**

Q.3 A ball is thrown vertically upward. Draw its speed time graph.   **(1)**

Q.4 Two balls of different masses (one lighter and other heavier) are thrown vertically upward with same initial speed. Which one will rise to greater height ?
OR
An object can accelerate while travelling at Constant Speed but not at constant velocity. Is it true? Explain.   **(1)**

Q.5 Define unit vector.
OR
Define equal vectors.   **(1)**

Q.6 What is the angle between velocity vector and acceleration vector at highest point of oblique projection.   **(1)**
OR
Write pair of angles for which horizontal range of oblique projection is same.

Q.7 A stone when thrown on a glass window smashes the window pane into pieces but a bullet from the gun passes through making a clean hole. Why?   **(1)**

Q.8 Sand is spread on track covered with snow. Why ?
OR
Write SI unit of Impulse.   **(1)**

Q.9 What are concurrent forces?   **(1)**

Q.10 Does the gravitational force of sun do any work on earth, when earth revolves around sun in a perfect circular orbit?
OR
When a body is thrown up work done by gravity on the body is + ve or - ve ?   **(1)**

For questions 11, 12, 13 and 14 two statements are given.
Select the correct answers to these questions form the codes (a), (b), (c) and (d) as given below :
- **(a) Statement I and II are true and II is correct explanations of I.**
- **(b) Statement I and II both are true but II is not correct explanation.**
- **(c) Statement I is true but statement II is false.**
- **(d) Statement I and II both are false.**

Q.11 Statement I : Friction is non-conservative force.
Statement II : Work done by friction over a closed path is non-zero. **(1)**

Q.12 Statement I : Slope of momentum time graph gives acceleration.
Statement II : Acceleration is given by rate of change of momentum. **(1)**

Q.13 Statement I : The three vectors not lying in a plane can never add up to give null
vector.
Statement II : The three vectors not lying in a plane can not be represented by the
three sides of triangle taken in same order. **(1)**

Q.14 Statement I : Velocity gradient has the dimensions of frequency.
Statement II : Velocity gradient is rate of change of velocity with distance. **(1)**

SECTION : B

Question 15 and 16 are Case Study based compulsory questions.
Attempt any 4 sub parts from each question. Each question carry 1 mark.

Q.15 Two cars A and B travel in straight line. The distance of A from the starting point
is given as a function of time by $x_A(t) = Pt + qt^2$ with p=2.60 m/s and q 1.2m/s^2.
The distance of B from starting point is $x_B(t) = rt^2 - st^3$ where r=2.80 m/s^2 and
s=0.20 m/s^{-3}

Answer the following : (Any 4) **(4)**

   (i)   Which car is ahead just after they have the starting point ?
        (a) A moves ahead   (b) B moves ahead
        (c) both moves simultaneously   (d) data is insufficient

   (ii)   At what time do the Cars A and B have the same acceleration.
        (a) 2.67 s   (b) 6.27 s   (c) 4.33 s   (d) none

   (iii)   Which Car has constant acceleration
        (a) Car A   (b) Car B   (c) Car A & B both   (d) None

   (iv)   After 1 sec. which has higher acceleration
        (a) Car A (b) Car B (c) data is insufficient (d) both has same acceleration

   (v)   Motion of Car A is
        (a) uniform motion   (b) uniformly accelerated motion
        (c) non uniform motion (d) circular motion

Q.16 According to Newton's second law of motion F=ma where F is the force required to
produce an acceleration a in a body of mass m. If a=0 the F=0 i.e. no external force
is required to move a body uniformly along a st. line. If a force F acts on a body for
t seconds the effect of the force is given by Impulse=fxt=change in linear
momentum of the body.

With the help of the passage given above choose the most appropriate Answer for
following questions. (Any four) **(4)**

   (i)   A cricket ball of mass 150 g is moving with velocity 12m/s and is hit by a bat so
that the ball is turned back with a velocity of 20m/s . If duration of contact
between the ball 2 bat is 0.01 sec. The impulse of force is
        (b) 7.4 N.S   (b) 4.8 N.S   (c) 1.2 N.S   (d) 4.7 NC

   (ii) Average force exerted by the bat is
        (a) 480 N   (b) 120 N   (c) 1200 N   (d) 840 N

   (iii) The retardation of ball is
        (a) 1600 m/s^2 (b) 320m/s^2 (c) 3200 m/s^2 (d) 160 m/s^2

   (iv) An impulsive force 100 N acts on a body for IS. What is change in its linear
momentum?
        (a) 10 Ns   (b) 100 Ns   (c) 1000 Ns   (d) 1 Ns

   (v) SI unit of linear momentum is
        (a) kg m/s   (b) N.s   (c) both   (d) None

SECTION : C

Q.17 Check the dimensional consistency of $T = \frac{2\pi}{R} \sqrt{\frac{r^3}{g}}$. Where T=time period of satellite, R=Radius of earth, r=radius of orbit and g is acceleration due to gravity. **(2)**

Q.18 In equation $y = a \sin(\omega t - kx)$ obtain dimensional formula of ω and k. If x is distance and t is time. **(2)**

Q.19 The diameter of a circle is 2.486 m. Calculate the area with due regard to significant figures (take $\pi = 3.142$) **(2)**

Q.20 Derive $v^2 - u^2 = 2$ as by graphical method, where symbols have usual meaning. **(2)**

Q.21 An aircraft executes a horizontal loop of radius 1km with a steady speed of 900 km/hr. Calculate its centripetal acceleration.

OR

A ball of mass 20 gm hit a wall with a speed of 10m/s normally and returns back with same speed. Calculate change in its momentum. **(2)**

Q.22 If the magnitude of two vectors are 2 and 3and magnitude of their scalar product is $3\sqrt{2}$ then find angle between them. **(2)**

Q.23 A vector $\vec{C}$ when added to the resultant of $\vec{A} = 3\hat{\imath} - 4\hat{\jmath} + 5\hat{k}$ and $\vec{B} = 2\hat{\imath} - 3\hat{\jmath} - 4\hat{k}$ given unit vector along y axis find $\vec{C}$. **(2)**

Q.24 State and prove law of conservation of linear momentum.

OR

State law's of limiting friction. **(2)**

Q.25 A particle of mass 0.1 kg has an initial speed of 4 m/s at a point 'A' on a rough horizontal road. The coefficient of friction between the object and road is 0.15. The particle moves at a point 'B' at a distance of 2 m from A. What is the speed at 'B'? (take g=10m/s^2) **(2)**

OR

A shell of mass 0.20 kg is fired by a gun of mass 100 kg. If the muzzle speed of the shell is 80 m/s. What is the recoil speed of gun?

SECTION : D

Q.26 A body of mass 0.5 kg travels in a straight line with velocity $v = ax^{3/2}$ where $a = 5 \; m^{-1/2} 5^{-1}$. What is work done by the net force during its displacement from $x=0$ to $x = 2$ m ?

OR

If the momentum of body is increased by 100% then what will be the percentage increase in K.E. of the body. **(3)**

Q.27 A truck starts from rest and accelerates uniformly with 2 m/s2. At t=10 sec. a stone is dropped by a person standing on the top of truck (6 m high from ground) What are the (a) velocity and (b) acceleration. Stone at t=11 sec neglect air resistance.

OR

Two masses 8 kg and 12 kg one connected at the two ends of light in extensible string that passes over a frictionless pulley. Find acceleration of masses and tension in string (g=10m/s^2) **(3)**

Q.28 Two trains 120 m and 100 m in length are running in opposite direction with velocities 42 km/hr and 30 km/hr. In what time they will completely cross each other? **(3)**

OR

A car travelled the first third of distance x at speed 10km/hr, the second third at a speed of 20km/hr and the last third at a speed of 60 km/hr. Determine average speed of car over entire distance 'x'.

Q.29 (a) What is relative error ?

(b) If the error involved in the measurement of mass and length of one side of a cube are 4% and 3% respectively. What is maximum % error in calculation of density? **(3)**

Q.30 Experiments show that the frequency 'n' of tuning fork depends on length 'l' of prongs, density 'd' and the young's modulus 'Y' of material. On the basis of dimension derive an expression for 'n' of tuning fork. **(3)**

SECTION : E

Q.31 What is centripetal acceleration? Derive expression for it and hence show that it always act normal to instantaneous velocity.

OR

What is projectile motion? Derive equation of trajectory of a projectile when it is projected making angle 'θ' with horizontal from ground. Also derive formula for max. height and horizontal range of same. **(5)**

Q.32 (a) What is banking of road? Derive expression for max. permissible speed of vehicle to negotiate a banked Circular rough road.

(b) Why has horse to pull a cart harder during first few steps of his motion ?

OR

(a) What are angle of friction and angle of repose. Draw suitable diagram and derive relation between them.

(b) Why frictional force gets increased when two surfaces in contact are polished beyond a certain limit ? **(4+1)**

Q.33 (a) State and prove work energy theorem for a variable force.

(b) Explain zero work by taking suitable example.

OR

(a) Derive an expression for energy possessed by a body by virtue of its motion.

(b) In a ballestic demonstration, a police officer fires a bullet of mass 50 gm with speed 200 m/s on soft plywood of thickness 2 cm. The bullet emerges with only 10% of its initial K.E. What is the emergent speed of bullet ? **(3+2)**

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DELHI PUBLIC SCHOOL, BHILAI

Date : 16 -09 -2021   FIRST TERMINAL EXAMINATION 2021-22   TIME : 3 Hrs.

Class - XI   SUBJECT – MATHEMATICS   M.M. 80

General Instructions :

Read the following instructions very carefully and strictly follow them :

  (i)   This question paper contains **two parts A and B.** Each part is compulsory.
       Part A carries **24 marks** and **Part B** carries **56 marks.**
  (ii)   **Part A** has Objective Type Questions and **Part B** has Descriptive Type Questions.
  (iii)   Both **Part A** and **Part B** have choices.

Part A

  (i)   It consists of **two** sections I and II.
  (ii)   **Section I** comprises of **16** very short answer type questions.
  (iii)   **Section II** contains 2 case studies. Each case study comprises 5 case-based MCQs. An examinee is
       to attempt any 4 out of 5 MCQs.

PART B

  (i)   It consists of three sections III, IV and V.
  (ii)   Section III comprises of **10** questions of 2 marks each.
  (iii)   Section IV contains of 7 questions of 3 marks each.
  (iv)   Section V comprises of 3 questions of 5 marks each
  (v)   Internal choice is provided in 3 questions of Section – III, 2 questions of Section – IV and each
       question of Section – V. You have to attempt only one of the alternatives in all such questions.

<div align="center">

Part – A

Section – I

Questions 1 to 16 carries 1 mark each

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1. The number of proper subsets of a set containing n elements is
     (i) n   (ii) $2^n - 1$ (iii) 2^n (iv) n^2

2. The subsets of A = { $\emptyset$ } is ------------------
<div align="center">**OR**</div>
    The subsets of A = { { } } is -----------------

3. In set builder method the null set is represented by
   (i)   { }   (ii) $\emptyset$ (iii) { x : x≠ x }   (iv) { x : x = x }

4. The domain of $f(x) = \sqrt{x - [x]}$ is ----------------
<div align="center">**OR**</div>
    The domain of $f(x) = \sqrt{x - |x|}$ is -----------------

5. The two geometric means between 1 and 64 are
   (i)1 and 64 (ii) 4 and 16 (iii) 2 and 16 (iv) 8 and 16.

6. The pth term of an A.P. is q and the qth term is p, then the sum of the first p+q terms
   Will be (i) p – q (ii) p+q (iii) – (p+q) (iv) 0

7. Evaluate: $i^{37} + \dfrac{1}{i^{67}}$.
<div align="center">**OR**</div>
   Evaluate: $i^{543} + i^{654} - i^{253}$

8. The conjugate of $\dfrac{1}{3+5i}$ is -------------------

9. The multiplicative inverse of 3 – 2i in standard form is ------------------
<div align="center">**OR**</div>
    The multiplicative inverse of 5+4i in standard form is ---------------

10. Express $(1 + 2i)^3$ in the form a + ib.

11. The sum of n terms of an A.P. be $3n^2 - n$ and its common difference is 6, then its
     first term is (i) 3   (ii) 0   (iii) 2   (iv) 1

12. If n(A) = 3 and n(B) = 7, find the number of relations that can be defined from A to B

<div align="right">Contd...2</div>

13. Find the position of the first negative term in the A.P. 84,80,76,.............
14. How many numbers between 100 and 300 are divisible by 3?
15. If AxA contains the elements (1,3), (2,5) and (3,2) and if n(A) = 4 then find A
16. If A = { even numbers less than 10}, B = { Prime numbers less than 10}, find A∩B.
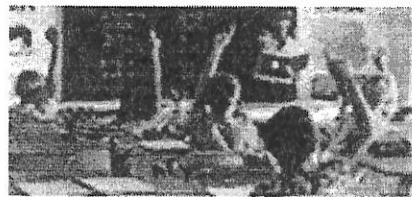
Section – II
Case study - based questions are compulsory. Attempt any 4 sub parts of each question.
Each subpart carries 1 mark. Answer any 4 in each.

17. Of the 50 members of a club, 21 are in basketball team,26 in hockey team and 29 in football team. 14 play hockey and basketball, 15 play hockey and football,12 play football and basketball and 8 play all the three. Answer the following.
    (a) No. of members who play at least one of the games
    (i)   45   (ii) 43   (iii) 44   (iv) 50
    (b) No. of members who play only football
    (i) 11   (ii) 13   (iii) 10   (iv) none of these
    (c) No. of members who play only two games
    (i) !8   (ii) 17   (iii) 15   (iv) none of these
    (d) No, of members who do not play any of them
    (i) 8   (ii) 6   (iii) 7   (iv) none of these
    (e) No. of members who do not play basketball
    (i) 29   (ii) 17   (iii) 19   (iv) 7

18. If 1 + 6 + 11 + ... + x = 148, then
    (a) the value of x is (i) 54 (ii) 38   (iii) 36 (iv) 34
    (b) x is the ------------ term, (i) 6th (ii) 10th (iii) 7th (iv) 8th
    (c) The sum of 10th term to 20th term in this A.P. is (i) 715 (ii) 710 (iii) 781 (iv) 721
    (d) sum of the first 40 terms of this A.P. is (i) 3940 (ii) 3958 (iii) 3980 (iv) 3990
    (e) position of the first term more than 200 is (i) 42nd (ii) 40th (iii) 43rd (iv) 41st

Part – B
Section – III
Questions 19 to 28 carry 2 marks each

19. If P(A) = P(B) then prove that A = B.
20. Find the domain and range of f(x) = |5 – sin2x|
21. If the sum of a certain number of terms of the A.P. 25, 22, 19, ...is 116. Find the last term.
22. Reduce $\left(\dfrac{1}{1-i} - \dfrac{2}{1+i}\right)\left(\dfrac{3-4i}{5+i}\right)$ to the standard form.
23. If a, b, c are in A.P., prove that $\dfrac{1}{\sqrt{b}+\sqrt{c}}, \dfrac{1}{\sqrt{c}+\sqrt{a}}, \dfrac{1}{\sqrt{a}+\sqrt{b}}$ are also in A.P.
                    OR
    Find the sum of all multiples of 8 between 100 and 200.
24. A relation R is defined from a set A = {2,3,4,5} to a set B = {3,6,7,10} as follows.
    (x,y) ∈R ⟺ x is relatively prime to y. Express R as a set of ordered pairs.
25. Find the domain and range of f(x) = $\dfrac{|x-4|}{x-4}$
                    OR
    Find the domain and range of f(x) = $\dfrac{x+5}{x-2}$
26. Let A = { 9,10,11,12,13 } and let f:A→N defined by f(n) = the highest prime factor of n.
    Find the range of f.

27. Solve: $21x^2 - 28x + 10 = 0$. Find the sum of the roots.

OR

Solve: $9x^2 - 12x + 20 = 0$. Find the sum of the roots.

28. If the nth term of the A.P. 9,7,5,......is same as the nth term of the A.P. 15,12,9,....., find n

Section – IV
Questions 29 to 35 carries 3 marks each.

29. If $(x + iy)^3 = u + iv$ then show that $\frac{u}{x} + \frac{v}{y} = 4(x^2 - y^2)$

30. Find the domain of the function $f(x) = \frac{1}{\sqrt{x^2-1}}$

OR

Find the domain and range of $f(x) = \frac{x^2}{x^2+5}$

31. The sums of n terms of two A.P.s are in the ratio $5n + 4 : 9n + 6$. Find the ratio of their 15th terms

32. Evaluate: $7 + 7.7 + 7.77 + 7.777 + \ldots\ldots$ to n terms

OR

150 workers were engaged to finish a job in a certain number of days. 4 workers were dropped out on the second day and 4 more dropped out on the third day and so on. It took 8 more days to finish the work. Find the number of days in which the work was completed.

33. If A,B and C are any three sets and if AUB = AUC and A∩B = A∩C, prove that B = C

34. Let A = { 1,2,3,4,5,6}. Let R be a relation on A defined by { (a,b): a,b ∈A, b is exactly divisible by a}. (i) Write R in Roster form   (ii) find the domain of R (iii) Find the range of R

35. The sum of four terms in A.P. is 20. If third term is removed other three terms form a G.P., find the numbers.

Section – V
Questions 36 to 38 carries 5 marks each

36. The sum of three numbers in G.P. is 28. The sum of their squares is 336. Find the numbers.

OR

If S is the sum, P is the product and R is the sum of the reciprocals of n terms of a G.P., Prove that $P^2R^n = S^n$

37. The sum of two numbers is 6 times their geometric mean, show that the numbers are in the ratio $(3+2\sqrt{2}) : (3 - 2\sqrt{2})$.

OR

A man buys a scooter for Rs. 22000/ He pays Rs. 4000/ cash and agrees to pay the balance in annual instalments of Rs. 1000/ plus 10% interest on the unpaid amount. How much the scooter will cost him?

38. Let R be a relation from R(Real nos.) to R(Real nos.) defined by

R = { (a,b) : a,b ∈ R and a ≤ b^2 }

Are the following true? **Give reasons.** (i) $(a,a) \in R$ for all $a \in R$

(ii) $(a,b) \in R \Rightarrow (b,a) \in R$ for all a,b ∈ R.

(iii) $(a,b) \in R$ and $(b,c) \in R \Rightarrow (a,c) \in R$ for all a,b,c ∈ R.

OR

Let R be a relation on N×N defined by (a,b) R (c,d) iff a + d = b + c for every (a,b), (c,d) ∈ N×N. Are the following true? **Give reasons.**

(i) (a,b) $R(a, b)$ for all (a,b) ∈ $N \times N$

(ii) (a,b) $R(c, d) \Rightarrow$ (c,d)$R(a, b)$ for all (a,b), (c,d) ∈ N×N

(iii) (a,b) R (c,d) and (c,d) R (e,f) ⇒ (a,b) R (e,f) for all (a,b), (c,d), (e,f) ∈ N×N

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 21.09 .2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours
CLASS : XI   SUBJECT : CHEMISTRY   Max. Marks : 70

<u>General Instructions</u>:
Read the following instructions very carefully and strictly follow them:
1. This question paper comprises four sections – A, B, C and D. There are 33 questions in the question paper. All questions are compulsory.
2. **Section A** - Questions no. 1 and 2 are case-based questions, having 4 MCQs. Each carrying1 mark.
3. **Section A** - Questions no. 3 to 16 are MCQs type questions carrying 1 mark each.
4. **Section B** - Questions no. 17 to 25 are short answer type questions or reasoning assertion type questions carrying 2 marks each.
5. **Section C** - Questions no 26 to 30 are short answer type questions or reasoning assertion type question carrying 3 marks each.
6. **Section D** - Questions no 31 to 33 are long answer type questions carrying 5 marks each.
7. There is no overall choice in the question paper. However, an internal choice has been provided.
8. Use of log tables and calculators is not permitted.
9. Z for Sc=21, Cr=24, Fe=26, Mn=25, Co=26, Cl=35.5. H=1, C=12, O=16, Na=23.

1. Orbitals are regions or spaces where there is a maximum probability of finding electrons. Qualitatively, these orbitals can be distinguished by their size, shape, and orientation. An orbital of small size means there is more chance of finding the electron near the nucleus. Shape and orientation mean the direction in which the probability of finding the electron is maximum. Atomic orbitals can be distinguished by quantum numbers. Each orbital is designated by three quantum numbers n, l, and m_l (magnetic quantum number) which define energy, shape, and orientation but these are not sufficient to explain spectra of multi-electrons atoms. Spin quantum number (m_s) determines the spin of electrons. Spin angular momentum of the electron has two orientations relative to the chosen axis which are distinguished by spin quantum numbers m_s which can take values +1/2 and −1/2.

   (a) How many orbitals are associated with n = 3?
       (i) 2   (ii) 9   (iii) 12   (iv) 10
       OR
   Describe the orbitals represented by (i) n = 2, l = 1
       (i) 2s   (ii) 2p   (iii) 2d   (iv) 2f

   (b) What is the atomic numbers of elements whose outermost electrons are represented by $3s^1$
       (i) 12   (ii) 13   (iii) 11   (IV) 15

   (c) if the quantum number 'l' has value of 2, what are the permitted values of the quantum number m_l ?
       (i) 3   (ii) 5   (iii) 7   (iv) 2

   (d) How many electrons are possible in the orbital with following quantum number n=5, l=3.
       (i) 6   (ii) 10   (iii) 12   (iv) 14

2. In 1887, H. Hertz performed a very interesting experiment in which electrons (or electric current) were ejected when certain metals (for example potassium, rubidium, caesium etc.) were exposed to a beam of light. The phenomenon is called **Photoelectric effect**. The results observed in this experiment were:
   (i) The electrons are ejected from the metal surface as soon as the beam of light strikes the surface, i.e., there is no time lag between the striking of light beam and the ejection of electrons from the metal surface.
   (ii) The number of electrons ejected is proportional to the intensity or brightness of light.
   (iii) For each metal, there is a characteristic minimum frequency,v_0 (also known as threshold frequency) below which photoelectric effect is not observed. At a frequency $v > v_0$, the ejected electrons come out with certain kinetic energy. The kinetic energies of these electrons increase with the increase of frequency of the light used.

   (i) The minimum energy required to remove an electron is called
       (A) Stopping potential (B) Kinetic energy   (C) Work function   (D) None of these

(ii) If the work function for a certain metal is 3.2×10^{-19} joule and it is illuminated with light of frequency 8×10^{14} Hz. The maximum kinetic energy of the photo-electrons would be (h= 6.63×10^{-34} Js).

    (A) 2.1×10^{-19} J   (B) 8.5×10^{-19} J   (C) 5.3×10^{-19} J   (D) 3.2×10^{-19} J

(iii) In a photoelectric experiment for 4000 Å incident radiation, the potential difference to stop the ejection is 2 V. If the incident light is changed to 3000 Å, then the potential required to stop the ejection of electrons will be

    (A) 2 V   (B) Less than 2 V   (C) Zero   (D) Greater than 2 V

(iv) How does the intensity affect the photoelectric current?

    (a) As intensity increases, the photoelectric effect increases

    (b) As the intensity increases, the photoelectric effect decreases

    (c) As the intensity decreases, the photoelectric effect becomes twice

    (d) No effect

OR

The photoelectric emission could be explained by the _____

    (a) Particle nature of light   (b) Wave nature of light

    (c) Dual nature of light   (d) Quantum nature

3. The pair of ions having same electronic configuration is :

    (a) Cr^{3+}, Fe^{3+} (b) Fe^{3+}, Mn^{2+} (c) Fe^{3+}, Co^{3+} (d) Sc^{3+}, Cr^{3+}

4. Which of the following is the correct order of size of the given species :

    (a) $I > I^- > I^+$ (b) $I^+ > I^- > I$ (c) $I > I^+ > I^-$ (d) $I^- > I > I^+$.

5. If the concentration of glucose ($C_6H_{12}O_6$) in blood is $0.9g$ L^{-1}, what will be the molarity of glucose in blood :

    (a) 5 M   (b) 50 M   (c) 0.005 M   (d) 0.5 M.

OR

What will be the molality of the solution containing $18.25g$ of HCl gas in 500g of water :

    (a) 0.1 m   (b) 1 M   (c) 0.5 m   (d) 1 m.

6. What is the mass percent of carbon in carbon dioxide :

    (a) 0.034%   (b) 27.27%   (c) 3.4%   (d) 28.7%.

7. The last element of the p-block in 6th period is represented by the outermost electronic configuration :

    (a) $7s^2 7p^6$ (b) $5f^{14} 6d^{10} 7s^2 7p^0$ (c) $4f^{14} 5d^{10} 6s^2 6p^6$ (d) $4f^{14} 5d^{10} 6s^2 6p^4$

OR

Which of the elements whose atomic numbers are given below, cannot be accommodated in present set up of the long form of the periodic table :

    (a) 107   (b) 118   (c) 126   (d) 102.

8. Which of the following species has tetrahedral geometry :

    (a) BH_4^- (b) NH_2^- (c) CO_3^{-2} (d) H_3O^+.

9. In which of the following molecules are all the bonds not equal :

    (a) AlF_3 (b) NF_3 (c) ClF_3 (d) BF_3 .

OR

Which of the following species contains three bond pairs and one lone pair around the central atom :

    (a) H_2O (b) BF_3 (c) NH_3 (d) PCl_3.

10. Which of the following elements does not show disproportionation tendency :

    (a) Cl   (b) Br   (c) F   (d) I.

OR

The oxidation number of an element in a compound is evaluated on the basis of certain rules. Which of the following rules is not correct in this respect :

    (a) The oxidation number of hydrogen is always +1.

    (b) The algebraic sum of all the oxidation numbers in a compound is zero.

    (c) An element in the free or the uncombined state bears oxidation number zero.

    (d) In all its compounds, the oxidation number of fluorine is −1.

11. For the electrons of oxygen atom, which of the following statements is correct :
  (a) Z_{eff} for an electron in a 2s orbital is the same as Z_{eff} for an electron in a 2p orbital.
  (b) An electron in the 2s orbital has the same energy as an electron in the 2p orbital.
  (c) Z_{eff} for an electron in 1s orbital is the same as Z_{eff} for an electron in a 2s orbital.
  (d) The two electrons present in the 2s orbital have spin quantum numbers m_s but of opposite sign.

In the following questions (12-16), a statement of assertion followed by a statement of reason is given, Choose the correct answer out of the following choices : (1x5=5)
  (i) A If both Assertion & Reason are true and the reason is the correct explanation of the assertion.
  (ii) B If both Assertion & Reason are true but the reason is not the correct explanation of the assertion.
  (iii) C If Assertion is true statement but Reason is false.
  (iv) D If both Assertion and Reason are false statements.

12. Assertion : Number of atoms of He in 60 u is 15.
  Reason : Atomic weight of He is 4 u.

13. Assertion : It is impossible to determine the exact position and exact momentum of an electron simultaneously.
  Reason : The path of an electron in an atom is clearly defined.

14. Assertion : Black body is an ideal body that emits and absorbs radiations of all frequencies.
  Reason : The frequency of radiation emitted by a body goes from a lower frequency to higher frequency with an increase in temperature.

15. Assertion : Electron gain enthalpy becomes more negative as we go down a group.
  Reason : Size of the atom decreases on going down the group and the added electron would be closer from the nucleus

16. Assertion : Sodium chloride formed by the action of chlorine gas on sodium metal is a stable compound.
  Reason : This is because sodium and chloride ions acquire octet in sodium chloride formation

SECTION -B

17. The reactant which is entirely consumed in reaction is known as limiting reagent. In the reaction $2A + 4B \longrightarrow 3C + 4D$, when 5 moles of A react with 6 moles of B, then
  (i) Which is the limiting reagent ? (ii) Calculate the amount of C formed. (2)

18. What will be the mass of one atom of C-12 in grams? (2)
19. Explain why cation are smaller and anions larger in radii than their parent atoms? (2)
20. Write Lewis structure of the following compounds HNO_3, SO_2 (1+1)
21. Calculate the formal charge on each 'O' atom of O_3 molecule. (2)
22. MnO_4^{2-} undergoes disproportionation reaction in acidic medium but MnO_4^- does not. Give reason. (2)
23. Balance the following equations in basic medium by ion-electron method
  $$Cl_2O_7(g) + H_2O_2(aq) \longrightarrow ClO_2^-(aq) + O_2(g)$$ (2)

  OR

  Balance the following equations in acidic medium by ion-electron method
  $$MnO_4^-{}_{(aq)} + SO_2{}_{(g)} \longrightarrow Mn^{+2}{}_{(aq)} + HSO_4^-{}_{(aq)}$$

24. Assign oxidation number to the underlined elements in each of the following species :
  (i) $H_2\underline{S}_2O7$ (ii) $K_2\underline{Mn}O_4$ (1+1)

25. Consider the elements : Cs, Ne, I, F
  (a) Identify the element that exhibits only –ve oxidation state. (2)
  (b) Identify the element that exhibits only +ve oxidation state.

SECTION -C

26. The density of 3M solution of NaCl is 1·25g/ml. Calculate the molality of solution. (3)

  OR

  If the density of methanol is 0.793 kg L^{-1}, what is its volume needed for making 2.5 L of its 0.25 M solution?

27. The velocity associated with a proton moving in a potential difference of 1000 V is 4.37×10^5 ms^{-1}. If the hockey ball of mass 0.1 kg is moving with this velocity, calculate the wavelength associated with this velocity. (3)

OR

The longest wavelength doublet absorption transition is observed at 589 and 589.6 nm. Calculate the frequency of each transition and energy difference between two excited states.

28 (A) Among the second period elements the actual ionization enthalpies are in the order Li < B < Be < C < O < N < F < Ne.

Explain why (i) Be has higher $\Delta_i H$ than B (ii) O has lower $\Delta_i H$ than N and F? (2)

(B) Which among the given pair of elements would have a more negative electron gain enthalpy? (1)

(i) F or Cl

29. Discuss the shape of the following molecules using the VSEPR model: PCl_5, SF_4, NH_3 (3)

30. (A) Mention at least two factors affecting the formation of ionic bond.

(B) Among metallic and covalent radius of an element which is larger and why ? (2)

SECTION-D

31. (A) In three moles of ethane (C_2H_6), calculate the following: (3+2)

(i) Number of moles of carbon atoms.

(ii) Number of moles of hydrogen atoms.

(iii) Number of molecules of ethane.

(B) Molarity of solution changes with temperature but molality does not. Explain

OR

(A) Calculate the amount of carbon dioxide that could be produced when : (3+2)

(i) 1 mole of carbon is burnt in air. (ii) 1 mole of carbon is burnt in 16g of dioxygen.

(iii) 2 moles of carbon are burnt in 16g of dioxygen.

(B) In a reaction, $A + B_2 \longrightarrow AB_2$

Identify the limiting reagent, if any, in the following reaction mixtures :

(i) 300 atoms of A + 200 molecules of B

(ii) 100 atoms of A + 100 molecules of B

32. (A) Write down all the four quantum numbers for outermost electron of potassium atom (Z=19).

(B) Write the electronic cofiguration of Cr^{+3} (z=24)

(C) Define Pauli exclusion principle. Why is it called exclusion principle ?

(D) Why half filled and fully filled orbitals are more stable? (1+1+1+2=5)

OR

(A) What is the maximum number of emission lines when the excited electron of a H atom in n = 6 drops to n=2 ? (1+3+1)

(B) If the position of the electron is measured within an accuracy of ± 0.002 nm, calculate the uncertainty in the momentum of the electron. Suppose the momentum of the electron is $h/4\pi_m \times 0.05$ nm. Is there any problem in defining this value ?

(C) What is the atomic numbers of elements whose outermost electronic configuration represented as $2p^3$

33. (A) How do you justify the presence of 18 elements in 5th period of periodic table ? (2+1+1+1)

(B) Write the general electronics configuration of d-block elements.

(C) Rn (Z = 86) is the last noble gas discovered. Predict what will be the atomic number of the next noble gas to be discovered ? Write its symbol.

(D) Atomic number of an element is 34. Deduce its period and group.

OR

(A) Electronic configuration of some elements are given below : (2+2+1)

(i) $1s^2 2s^2 2p^6 3s^1$ (ii) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^1$

(iii) $1s^2 2s^2 2p^6 3s^2 3p^4$ (iv) $1s^2 2s^2 2p^6$

Which of these is an alkali metal, alkaline earth metal, transition metal and noble gas.

(B) Predict the position of the element in the periodic table satisfying the electronic configuration (n–1) d, ns^2 for n = 4.

(C) Write the general electronics configuration of f-block elements

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DATE : 21.09 .2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours
CLASS : XI   SUBJECT : BUSINESS STUDIES   Max. Marks : 80

GENERAL INSTRUCTIONS:
1. The question paper contains 34 questions.
2. Answers should be brief and to the point.
3. Answers to the questions carrying 3 marks maybe from 50 to 75 words.
4. Answers to the questions carrying 4 marks maybe about 150 words.
5. Answers to the questions carrying 6 marks maybe about 200 words.
6. Attempt all parts of the questions together.

SECTION : A

1. Mr. X started business of buying and selling of refrigerators. The business of Mr.X will be considered as _____ .
   (a) Commerce   (b) Trade   (c) selling   (d) Transaction   (1)

2. Name the form of business organization in which the members are jointly and individually liable for payment of firm's debts.
   (a) Sole proprietorship   (b) Partnership   (c) Company   (d) JHUF   (1)

3. In a survey conducted by Government of India, it was found that many farmers of the country are unable to secure loan for their agricultural needs.
   Keeping this in mind, the government decided to form a public enterprise under a Special Act of the Parliament, which will be free from government interference and will have financial and operational autonomy.
   Which type of public enterprise would you suggest to the government?
   (a) Departmental Undertaking   (b) Statutory Corporation
   (c) Government company   (d) Cooperative Society   (1)

4. Which one of the following is a factor which gives advantage to e-business over traditional business?   (1)
   (a) Transaction risks   (b) Investment requirements
   (c) Ethical fallouts   (d) personal touch with customers

5. Mr. Mahesh Bhatt desires to have two benefits from his bank account. First, to earn higher interest on balance and second, to face minimum risk on dishonouring of cheque. Which type of account should be opened by him ?
   (a) Current account   (b) Savings account
   (c) Multiple Option Deposit   (d) Recurring account   (1)

6. Which government enterprise is registered under Indian Companies Act, 2013?
   (a) Departmental Undertaking   (b) Public Corporation
   (c) Government company   (d) Partnership firms   (1)

7. Principle of Indemnity is not applicable to which insurance?
   (a) Health Insurance (b) Fire Insurance (c) Life Insurance (d) Marine Insurance (1)

8. The transactions through the websites of Flipkart or Amazon is an example of
   (a) B2B   (b) Intra – B   (c) C2C   (d) B2C   (1)

9. RBI has been set up as which type of public enterprise?
   (a) Statutory Corporation   (b) Departmental undertaking
   (c) Government company   (d) Multinational company   (1)

10. Ashish took a fire insurance policy for his property worth ₹ 5 lakhs with two insurers, ICICI Lombard General Insurance Co. Ltd. for ₹ 4 lakhs and Bajaj Allianz General Insurance Co. Ltd. for ₹ 1 lakh. An electric short circuit in his property caused fire and it resulted in a loss of ₹ 1,50,000. He filed a claim for ₹ 1 lakh against each of the two insurance companies. Which principle of insurance has been highlighted in the above case?

(a) Mitigation   (b) Subrogation   (c) Contribution   (d) Indemnity   (1)

11. Assertion (A) : B2C transactions have business firms at one end and their customers on the other end.

Reason (R) : Selling used books is an example of B2C transaction.   (1)

(a) Both Assertion (A) & Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

(c) Assertion (A) is true but Reason (R) is false.

(d) Assertion (A) is false and Reason (R) is true.

12. A countrywide system through which a person can electronically transfer from one bank branch to another person having an account with another bank branch in the country during fixed intervals is known as

(a) Pay Order   (b) RTGS   (c) NEFT   (d) Bank Draft   (1)

OR

Mr. Ankit has a current account in State Bank of India, he is having many transactions of fund transfers everyday. One day he asked the bank's manager to transfer ₹ 40,000 to a client in Mumbai immediately. The bank manager replied, to transfer the fund immediately minimum amount should be ₹ 2 lakhs. Identify the concept discussed in the above case.

(a) NEFT   b) RTGS   (c) Digital Cash   (d) ATM   (1)

Read the following text and answer questions 13 – 16 on the basis of the same.

Deepali an electronic engineer after completing her MBA from IIM Kolkata, wants to open her own business of generation of electricity through garbage. She shared her business idea with some of her friends and they all liked it and agreed to join the business as owners. After detailed investigation about the idea, i.e. economically viable, technically feasible. Deepali gave her idea a practical shape and got her company incorporated as 'Eco Electricals Ltd.'. After incorporation, the company issued share capital of ₹ 1 crore in the capital market.

13 Name the type of business activity Eco Electricals is engaged in

(a) primary industry (b) secondary industry   (c) tertiary industry (d) trade   (1)

14. Deepali wants to open her own business of generation of electricity through garbage. Specify the category of such type of industries.

(a) Analytical   (b) Extractive   (c) Synthetic   (d) Processing   (1)

15. Deepali is an Electronic Engineer after completing her MBA. Which type of economic activity is highlighted in the above lines.

(a) Profession   (b) Employment   (c) Business   (d) Trade   (1)

16. Which type of trade can be assumed in the above case.

(a) Wholesale   (b) Internal   (c) External   (d) Retail   (1)

Read the following text and answer questions 17 - 20 on the basis of the same.

Madhu, Himanshu and Ashu after completing B.E. in Civil Engineering have jointly taken a project of constructing three government school buildings in a village near Agra, within the time period of 6 months. As per the written agreement between them, only Madhu and Ashu will contribute the capital, take all managerial decisions and Himanshu will contribute capital only but will not be actively involved in management.

17. Himanshu will contribute capital only but will not be actively involved in management. What type of partner is Himanshu?
    (a) Active   (b) Dormant   (c) Nominal   (d) Secret   (1)

18. Specify the kind of partnership mentioned above:
    (a) Limited Partnership   (b) Particular Partnership
    (c) Partnership at will   (d) General Partnership   (1)

19. Identify the document which defines the terms and conditions of such partnership.
    (a) MoU   (b) MoA   (c) Partnership Deed   (d) Partnership registration   (1)

20. If the partners are not able to complete the project effectively and efficiently. Then who will be held liable for the losses for non- completion of the project?   (1)
    (a) Madhu   (b) Himanshu   (c) both Madhu and Ashu   (d) All three of them

SECTION : B

21. Mr. Harish is a farmer and cultivates sugarcane on a large piece of land in a district in Maharashtra. Mr. Harish has sold his ancestral house for ₹ 40 lakhs. His son, Sagar proposed him to establish a sugar mill with this money as the raw material sugarcane will be available from their fields.   (1+2)
    (a) Mention the type of industry in which Harish is engaged in.
    (b) Also define the type of manufacturing industry his son, Sagar plans to set up.

22. Life Insurance Corporation of India is the largest insurance company in India. It is headquartered in Mumbai. It was founded in the year 1956 when the Parliament of India passed the Life Insurance of India Act that nationalised the private insurance industry in India.
    (a) LIC is classified as which form of public enterprise?
    (b) What does the Act define?
    (c) Mention any one feature of the same.   (1X3)

OR

Indian Railways is part of the Railway Ministry. The finances are allocated from the government treasury and whatever revenue it earns is deposited to the government treasury only. The recruitment, selection and appointment of employees is done in the same way as that of civil servants.
(a) Name the type of public enterprise Indian Railways is.
(b) What is the status of employees working in Indian Railways?
(c) How does it get its finance?   (1X3)

23. Mr. Amit is an owner of a factory manufacturing crackers. He insured his factory against fire. While taking the policy he did not disclose about the product being manufactured as this would have led to the payment of much higher premium. Once the factory got severely damaged in fire but the Insurance company refused to accept his claim. He filed a case against the company. The court favoured the insurance company on the ground that Mr. Amit has not revealed the fact related to the type of product being manufactured. So the contract of insurance is voidable.
    (a) Identify and state the principle violated by Mr. Amit.
    (b) Quote the line stating where the violation of this principle occurrred.   (2+1)

OR

Mr H (husband) took the life insurance policy of Mrs. W (his wife). After one year, the couple got divorced and after two years his wife died. Is Mr. H entitled to get compensation from the insurance company, if the husband was regularly paying the premium amount. Give reasons to support your answer.   (3)

24. Explain any three benefits of e- business. (3)

SECTION : C

25. Differentiate between Private and Public Company on the basis of (4)
    (a)Number of members   (b) Commencement of business
    (c) Number of Directors   (d) Minimum paid up capital

OR

Explain any four features of a joint stock company. (4)

26 Identify the different types of business risks being referred in the given cases.

    (a) Sahil had a matchstick factory in Nepal which got destroyed in the earthquake.

    (b) Gracias company was charged with evasion of tax and asked to pay fine in crores
        which would lead to heavy losses for the company.

    (c) Manish, a senior manager in a company shared confidential information about
        the company with a competitor which led to huge losses for the company.

    (d) Typewriters have become redundant. (1X4)

27. Describe any four accounts opened in a bank. (4)

OR

Describe any four ways of e-banking (4)

28. Identify the type of public sector enterprise in the following statements

    (a) RBI and FCI are the examples of this form of enterprise

    (b) It enjoys maximum autonomy in all business decisions

    (c) Minimum 51% of share capital is held by the government

    (d) Air India is an example of this form of enterprise (4)

29. Give the difference between e-business and traditional business on the following
    basis of distinction

    (a) Ease of formation (b)Physical presence (c)cost of setting (d)operational cost   (4)

30. Prateek has allowed Govind and Naresh for using his name for the sports equipment
    manufacturing unit recently promoted by them as partners. But Prateek will not
    take active part in managing the firm and share its profits or losses.

    (a) Will Prateek be considered as a partner in the firm? Name and explain.

    (b) Name any two partners of the above type as mentioned in (a).

    (c) Comment upon the kind of liability Prateek will have to assume under such
        circumstances. (2+1+1)

SECTION : D

31 What do you mean by business risk? Name the different types of business risks.
    Explain any three causes of business risks. (1+2+3)

OR

What do you mean by objectives of business? Explain any five social objectives of
business. (1+5)

32. Write briefly about the different Principles of insurance. (6)

33. Explain in brief the following:

    (a) Perpetual succession   (b) Separate legal entity

    (c) Certificate of Incorporation   (d) Prospectus (1.5 x 4)

34. What is Joint Hindu Undivided Family Business? Describe any five features of the
    same. (1+5)

OR

What is Memorandum of Association? Explain briefly the five clauses of MOA. (1+5)

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 16.09.2021   **MID TERM EXAMINATION (2021-22)**   **Time : 3 Hours**

CLASS : XI   **SUB. – HOME SCIENCE**   **Max. Marks : 70**

GENERAL INSTRUCTIONS:-

1. All questions are compulsory.
2. There are total 36 questions.
3. Question paper is divided into three sections - A, B and C.
4. Section A has question no.1 to 14 (objective type/multiple choice questions) and are of 1 mark each.
5. Section B has question no. 15 to 21 (case study based multiple choice questions) and are of 1 mark each.
6. Section C has question no.22 to 27 of 2 marks each, question no.28 and 29 of 3 marks each, question no.30 to 33 of 4 marks each and question no.34 to 36 of 5 marks each.

SECTION A (OBJECTIVE TYPE QUESTIONS)

Q1. Listening to music on the radio or a music system is an example of _____ .
    (a)   one-way communication.   (b)   Two-way communication.
    (c)   Intra-personal communication.   (d)   Inter-personal communication.   (1)

Q2. A _____ is one which includes a variety of foods in adequate amounts and correct proportions to meet the day's requirements of all essential nutrients such as proteins, carbohydrates, fats, vitamins, minerals, water, and fibre.
    (a) Modified diet   (b) Super diet   (c) Calculated diet   (d) Balanced diet   (1)

Q.3 _____ is not an example of cellulosic fibre.
    (a) Hemp   (b) Kapok   (c) Silk   (d) Jute   (1)

Q.4 _____ are elements of identity.
    (a) Self concept and self esteem   (b) Personal and social identity
    (c) Personal identity   (d) Social identity   (1)

Q.5 The first Home Science College in India was named after _____.
    (a) Sarojini Naidu   (b) Rajkumari Amrit Kaur
    (c) Kamladevi Chattopadhyay   (d) Lady Dorothy Irwin   (1)

Q.6 _____ is a form of mental process involving observing, analyzing and drawing conclusions meaningful to the individual's present, past and future behaviour and life. It is an on-going process that transpires inside an individual.
    (a)   one-way communication.   (b)   Two-way communication.
    (c)   Intra-personal communication.   (d)   Inter-personal communication.   (1)

Q.7 Give two examples of individual resources.   (1)

Q.8 Which of the following is an example of Staple fibre?
    (a) Wool   (b) Silk   (c) Cotton   (d) Nylon   (1)

Q.9 _____ occupy the base of the food guide pyramid.
    (a) Cereal, grains and products   (b) Fats and sugar
    (c) Pulses and legumes   (d) None of the above   (1)

Q.10 Which of the following is not a human resource ?
    (a) Aptitude   (b) Energy   (c) Skills   (d) Space   (1)

Q.11 During illness, nutrient requirements _____
    (a) Decrease   (b) Don't change   (c) Increase   (d) None of the above   (1)

Q.12 Mention the quanity of protein and calcium provided by 100 gm of edible portion of soyabean.   (1)

Q.13 Name four social determinants of health.   (1)

Q.14 Explain the terms 'ginning' and 'retting'.   (1)

SECTION B

Adolescence is the period in which the growing individual develops a strong need for support and acceptance from the peers. At times, parental and peer values can be in conflict with each other and the adolescent may tend to lean more towards friends. This can cause disharmony in parent child relationships. Conforming to peer pressure can be both positive and negative. The negative effects become evident when adolescents indulge in harmful behaviour such as smoking or consuming, drugs or alcohol or bullying. However, often peers and parents serve complementary functions and fulfil different needs of the adolescents. It has been seen that a family atmosphere that promotes both individuality and connectedness is important for the identity development of the adolescent.

Q15. _____implies greater opportunity and the ability to have one's own point of view.   1

(a) 'Individuality'   (b) 'Connectedness' (c) Both (a) and (b)   (d) None of the above

Q16. _____suggests greater sensitivity to and respect and openness to others' views.   1

(a) 'Individuality'   (b) 'Connectedness'   (c) Social identify (d) All of the above

Q17. The period of pubescence for most girls ranges from_____ years.   1

(a) 10 to 12   (b) 11 to 13   (c) 11 to 14   (d) 10 to 13

One of the simplest ways to plan a balanced diet is to divide foods into groups and then make sure that each group is included in the meals. A food group consists of different foods which have common characteristics. These common features may be the source of food, the physiological function performed, or the nutrients present

Q18. The five basic food groups have been suggested by _____ .   1

(a) ICDS   (b) WTA   (c) ICMR   (d) RDA

Q19. _____is a macronutrient.

(a) Roughage   (b) Iron   (c) Calcium (d) Iodine   1

Q20. _____ is an eating disorder which is most commonly seen in Adolescence.

(a) Wasting (b) Anorexia Nervosa (c) Rickets (d) Dental erosion   1

Q21. A _____provides a safety margin for nutrients.

(a) Dietary allowances   (b) Balanced Diet (c) Five food groups (d) Food Pyramid   1

SECTION C

Q22. What do you understand by Elastomeric fibres.   (2)
Q23. Define health.   (2)
Q24. Name the various fields of 'Human Ecology and Family Sciences'.   (2)
Q25. What are the various modes of verbal and non-verbal communication?   (2)
Q26. What do you understand by environmental hygiene?   (2)
Q27. Mention four indicators of good mental health.   (2)
Q28. Why is cotton more suitable for summer season?   (2)
Q29. Describe the impact of family on the development of the sense of identity during adolescence. Enumerate the types of parenting style.   (3)
Q30. Briefly explain: (3)

(a)   Individual and Shared Resources   (b)   Natural and Community Resources
Q31. What are the characteristics of resources?   (4)
Q32. List the properties of Nylon fibre.   (4)
Q33. Briefly explain four main factors, listed by The World Health Organisation, that are important for nutritional well-being.   (4)
Q34. What are the guidelines for using the basic food groups?   (4)
Q35. Draw 'The SMCRE Model' of communication to show the complete process of communication and the elements involved in it. What is a channel? Mention the types of channels with examples.   (5)
Q36. Describe the characteristics of an adolescent's sense of self.   (5)
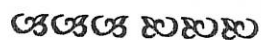
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DELHI PUBLIC SCHOOL, BHILAI

DATE : 16.09 .2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours
CLASS : XI   SUB. – APPLIED MATHEMATICS   Max. Marks : 80

General Instructions:
Read the following instructions very carefully and strictly follow them:
   (i) This question paper contains **two parts A and B.** Each part is compulsory.
       Part A carries **24 marks** and **Part B** carries **56marks.**
   (ii) **Part A** has Objective Type Questions and **Part B** has Descriptive Type Questions.
   (iii) Both **Part A** and **Part B** have choices.
Part A
   (i) It consists of **two** sections **I** and **II.**
   (ii) **Section I** comprises of **16** very short answer type questions.
   (iii) **Section II** contains 2 case studies. Each case study comprises 5 case-based MCQs.
        An examinee is to attempt any **4** out of **5** MCQs.
Part B
   (i) It consists of **three** sections **III, IV** and **V.**
   (ii) **Section III** comprises of **10** questions of **2** marks each.
   (iii) **Section IV** contains of 7 questions of **3** marks each.
   (iv) **Section V** comprises of 3 questions of **5** marks each
   (v) Internal choices are provided in 3 questions of Section – III, 2 questions of Section – IV and
       3 questions of Section – V. You have to attempt only one of the alternative in all such questions.

PART-A
SECTION-I

1. Find $157(mod\,14)$.

2. Find binary representation of the decimal number 37.

3. Find the value of $\frac{3^n+3^{n-1}}{3^{n+1}-3^n}$

4. Solve for x; $log_{\left(\frac{1}{2}\right)}512 = x$

5. Find antilogarithm for $\bar{2}.7451$

6. Find the mean of all factors of 18.

7. Find the sum of deviations of the observations 5,8,12,15,10,16 from the mean

8. Find the area of the quadrant of a circle whose perimeter 22 cm

9. The length of a rectangular screen is 15 cm and the area is 180 sq.cm. Find its perimeter.

10. A square of side 10 cm is cut into tiny squares of 2 cm length. Calculate the number of tiny squares so obtained

11. If A is a finite set of order 6 then find the number of proper subsets of A.

12. If $A = \{1,2,3\}$ then give an example of a relation in A which is symmetric and transitive but not reflexive

13. If A and B are two sets having 4 and 5 elements, then find the number of relations from A to B

14. Let R be a relation on the set N of natural numbers defined by 'n R m' if n divides m, then what type of relation R is?

15. Find k, if $k + 2, 4, k - 6$ are in A.P.

16. Give an example of a sequence which is an A.P. as well as a G.P.

SECTION-II

17.
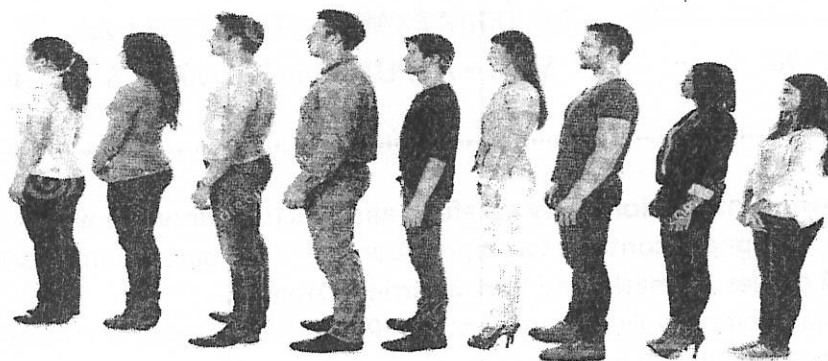
Nine persons are K, L, M, N, O, P, Q, R, and S are standing in a line. 'N' is standing second to the right of 'O' and 'M' is standing third to the right of 'O', L is standing at one end of the row. R is standing between Q and P. L is standing third to right of P. P is standing to the immediate right of K. Based on above information, answer the following questions;

(i)   Who is standing to the right of 'O'
        (a)M   (b)   K   (c)   S   (d) R
(ii)   Who is standing exactly in the middle of all persons
        (a)K   (b)   N   (c)   S   (d) Q
(iii)   Who are the immediate neighbours of K
        (a) M and P   (b)   P and R (c)   S and M   (d) O and L
(iv)   How many persons are standing between O and R
        (a)   4   (b)   5   (c)   3   (d) 6
(v)   The arrangement order is
        (a) ONMSKPRQL   (b) OMNSKPQRL   (c)   NOMSPQRLK   (d)OSNMKPRQL

18.
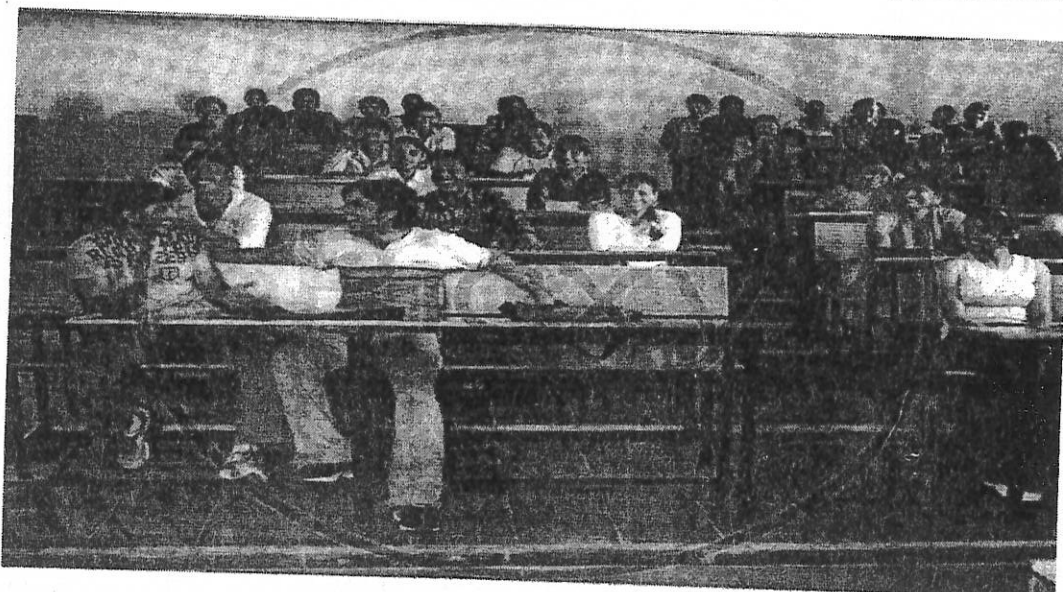
In a group of 50 students, studying French, English and Sanskrit were found to be as follows; French = 17, English = 13, Sanskrit = 15, French and English = 9, English and Sanskrit = 4, French and Sanskrit = 5, all the three = 3, Based on above information, answer the following;

(i)   The number of students who study only French
        (a) 17   (b)   6   (c) 8   (d) 10
(ii)   The number of students who study French and Sanskrit but not English
        (a) 2   (b)   5   (c) 4   (d) 12
(iii)   The number of students who study none of the three languages
        (a) 15   (b)   13   (c)   20   (d) 10
(iv)   The number of students who study only English
        (a)   9   (b)   3   (c)   5   (d) 7
(v)   The number of students, who study French and English but not Sanskrit
        (a)   4   (b)   7   (c)   5   (d) 6

PART-B
SECTION-III

19.   Divide binary number $(1001011)_2$ by binary number $(11)_2$ and write the quotient in decimal form

20. Multiply binary number $(100001)_2$ by binary number $(101011)_2$ and write the answer in decimal form.

21. If $2^x = 3^y = 6^{-z}$, then prove that $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = 0$.

OR

Show that $(x^{a+b})^{a-b} \cdot (x^{b+c})^{b-c} \cdot (x^{c+a})^{c-a} = 1$

22. Find x if $\log(x - 4) + \log(x + 2) = \log(2x - 3)$.

OR

If $a^2 + b^2 = 3ab$, then prove that $log(a^3 + b^3) = log(a + b) + log2 + loga + logb$

23. The mean marks of 28 students is 35. It is found that while calculating the mean, marks 23 was wrongly read as 32. Find the correct mean.

24. What day of the week was on June 21, 1437 ?

25. Verify by venn diagram; $(A \cup B)' = A' \cap B'$..

26. Find the domain and range of the relation R such that R $= \left\{(a, b): a = b + \frac{10}{b}, a, b \in N, b < 15\right\}$.

27. Find the 12th term from the end of the A.P. 1, 4, 7, 10 … … … 88.

OR

The sum of n terms of an A.P. is $pn + qn^2$, where p and q are constants, find the common difference.

28. The 4th term of a G.P. is square of its second term and first term is -3. Determine its 7th term

SECTION-IV

29. Using logarithm, find the approximate value of, $\dfrac{0.056 \times 0.0023 \times 24.71}{1.521 \times 0.974}$

30. Shyam can do a piece of work 25 days and Mohan can finish it in 20 days. They work together for 5 days and then Shyam leaves away. In how many days will Mohan finish the remaining work?

OR

A tank can be filled by a pipe in 3 hours and emptied by an outlet pipe in 4 hours. How long will it take to fill the tank if both the taps are opened together?

31. A train 100 m long takes 6 seconds to cross a man running at the rate 5 km/hr in a direction opposite to that of train. Find the speed of the train.

32. A right circular cone of height 8.4 cm and diameter of its base is 4.2 cm. It is melted and recast into a sphere. Find the diameter of the sphere.

33. For two sets A and B , prove that $A - (A - B) = A \cap B$ and verify it for $A = \{1,2,3,5,6,7,10\}$ and $B = \{2,4,5,6,7,9,11,13\}$

OR

If A ,B, C are three sets then using the theory of sets, prove that $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

34. Show that R is an equivalence relation in the set A= $\{x \in Z; 0 \le x \le 12\}$, where R= $\{(a, b): a, b \in A, |a - b|$ is divisible by 4$\}$.

35. The sum of three numbers in a G.P. is 56. If we subtract 1, 7 and 21 from these numbers in that order, we obtain an A.P. Find the numbers.

SECTION-V

36. A, B and C can complete a work in 24, 36 and 48 days respectively, they started together but C left after 4 days and A left 3 days before the completion of the work. In how many days will the work will be completed.

OR

The sum of deviations of a set on n values $x_1, x_2, x_3, \ldots \ldots \ldots x_n$ measured from 50 is -10 and the sum of deviations of the values from 46 is 70. Find n and the mean

37. The rain water from a roof $22\ m \times 20\ m$ drains into a cylindrical vessel having radius of base 2 m and height 3.5 m. If the vessel is just full, find the rain fall in cm

OR

A cylindrical vessel of radius 8 cm and 15 cm high has some water in it. A sphere with radius 3 cm and a cone of height 9 cm are dropped into the vessel and thus water level raised by $1\frac{5}{16}$. What is the radius of the base of the cone?

38. Find the sum to n terms of the series $0.4 + 0.44 + 0.444 \ldots \ldots \ldots \ldots \ldots$

OR

The sum of "n" of terms of three A.P.s are S_1, S_2 and S_3. The first term of each is unity and common differences are 1, 2 and 3 respectively. Prove that $S_1 + S_3 = 2S_2$.

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DELHI PUBLIC SCHOOL, BHILAI

DATE : 16.09.2021   MID TERM EXAMINATION (2021-22)   Time : 3 Hours

CLASS : XI   SUB. – INFORMATICS PRACTICES   Max. Marks : 70

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General Instructions:

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections:
   a. Section – I is short answer questions, to be answered in one word or one line.
   b. Section – II has two case studies questions. Each case study has 4 case-based sub-parts. An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
   a. Section-I is short answer questions of 2 marks each .
   b. Section-II is long answer questions of 3 marks each.
   c. Section-III is very long answer questions of 5 marks each.

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PART - A
SECTION-I

1. _____ Zetta Bytes make 1 Yotta Byte.   (1)

2. The Software which gives date and time service, is known as Application Software. State True / False.   (1)

3. Name one computer of 1st generation.   (1)

4. The memory which is volatile in nature is -   (1)
    (a) Cache memory (b) RAM   (c) Buffer   (d) None of these

5. 5th Generation computer uses _____ technology as one of the main features – (1)
    (a) Data Capturing   (b) Artificial Intelligence   (c) Key-Lock feature   (d) Virus Protection

6. Which of the following is a function of an Operating System Software -   (1)
    (a) It acts as an interface between a user and hardware.
    (b) It removes unwanted softwares.
    c. Translates high level language code.
    d. None of the above

7. The statement –   (1)
    print(type('DPS')) – will give output as –
    a. <class 'int'>   b. <class 'float'>   c. <class 'str'>   d. None

8. What output will be generated by the given code –   (1)
    print("75"+"20") –
    a. True   b. False   c. 7520   d. 95

9. Data Capturing means-'To convert input data into digital form.' State True/False - (1)

10. Define the term "Interpreter".   (1)

11. Name two softwares which are used for Word Processing Work.   (1)

12. Define the term "FLOSS" .   (1)

13. Name the developer of Python Programming Language .   (1)

14. What output will be produced by the following code –   (1)
        print(105+25-30/2)

15. print(bool(0))   (1)
    The above given code will generate output as -
    a. True   b. False   c. 0   d. None of the above

16. 10>20<30 – this chained expression will evaluate True/ False. (1)
17. From the given list sort-out the invalid identifier - (1)
    AB_o , xmnop , 1no 2 , _2m
18. Escape sequence '\t' is used for Horizontal Tab - State True/False. (1)

SECTION-II

Both the case study based questions (22 & 23) are compulsory. Attempt any four sub parts from each question. Each sub question carries 1 mark .

19. Consider the given Python code and answer the following -(any 4) (1X4=4)
    ```
    n1, n2 , n3 =10,20,30
    n1=n1+n2
    n2= n3//10
    n3=n1-n2
    print(n1,n2,n3)        #output1
    n2=n1*n2+n3 % 5        #output2
    tx="FLOWER"
    ```
    i.   What output will be generated by statement output1 in the above given code.
    ii. if n2 will be divided by (0) zero then which error will be raised. Name the Exception.
    iii. What output will be generated by statement output2 in the above given code.
    iv. Give single python statement to display the value of tx 7 times.
    v.   What kind of literal is the text – "FLOWER".

20. Given a Python code snippet, read it carefully and answer the following – (any 4) (1x4=4)
    ```
    for num in range(1,20,5 ):
        print("URBAN AREA")
        print("CG")
    ```
    i.   How many times body of loop will be executed
    ii. If I want to repeat body of loop only for 2 times then what changes will be required.
    iii. What output will be generated by the code
    iv. Which identifier/variable is working as control variable of loop.
    v.   What is iteration ?

PART - B
SECTION-I

21. What is the function of "Arithmetic and Logic Unit" and "Control Unit" of a Computer System ? (2)
22. Define Operating System Software. Name two Popular Operating System Software. (2)
    ### OR
    Write one advantage and one disadvantage of Open Source Software over Proprietary software.
23. Give name of any 2 Distributions of Python. Also give extension file name of Python programs. (2)
24. Write a program to enter two integer numbers and check whether the first number is divisible by second or not. (2)
25. Define the terms "Keywords" and "Identifiers" (2)
26. Explain "Identity Operators" and "Membership Operators"? (2)
    ### OR
    Define Literals and Tokens in Python with suitable example of each.
27. Write a program in Python which will take few numbers (say n) from user and will display its average. (2)
28. Write a Python script that asks the user to enter a length in centimeters. If the user enters negative length, the program should display "INVALID ENTRY" otherwise it should convert the length into inches and display it.
    2.54 cm= 1 inch (2)

29. Give python code to display the given series -   (2)
    1,4,7,10,13,16,.........40

30. What is empty statement. Why is it needed?   (2)

SECTION-II

31. Write a Python program that takes three integer numbers and prints the largest of these.
    (3)

32. Give Python code to display all numbers divisible by 5 between given lower and upper range (limit).   (3)

OR

Write a program to print a multiplicative table (multiples) of a given integer number upto 1st ten terms.

33. Write Python Program that reads two numbers and an arithmetic operator (+ , - , * , / , %) And displays the computed result.   (3)

SECTION-III

35. Study the code given below –   (1x5=5)
```
a=0
a+=20
a*=10
a%=2
```
  a. What will be the final value of a.
  b. Name data type of variable a.
  c. Give python statement to assign a new value "SUCCESS" to a.
  d. What is type casting?
  e. What do you understand by "Dynamic Type Casting"?

36(a) What are 3 different Logical operators used in Python? Explain each with suitable example.
    (2)
  (b) Explain chained comparison operator with suitable example code.   (1)
  (c) Name all mutable and immutable data types of Python.   (2)

37. Read given Python code and answer the following -   (1x5=5)
```
CD="SECRET&MISSION"
EX="EXAMINATION_PROTOCOL"
print (CD[1:3])     #statement1
print(CD+EX)        #statement2
print (CD [-5:-1])  # statement3
```
  i. What output will be generated by the above given code in statement1
  ii. What output will be generated by the above given code in statement2
  iii. Give python code to display "No of Characters" present in identifier CD
  iv. Give python code to display memory location of variable CD.
  v. Give python code to display data type of variable EX.

OR

Write a program to input sales of a Salesman. Calculate his Commission as given below.
If user enters negative value then it should display 'Invalid entry'.

Sales	Commission Rate
0- 5000	2% of Sales
50001- 10000	5%
10001- 20000	7%
20001-30000	9.5%
& above	12.5%

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Q.01   When did life came on the Earth?   (1×5=5)

Q.02   How many planets are there in the solar system?

Q.03   What is a rock?

Q.04.   What is a water divide?

Q.05   What is a river regime?

Q.06   What is petrology? Differentiate between Igneous and Metamorphic rock.   (3×10=30)

Q.07   What is a dwarf planet? Explain Big Bang theory.

Q.08   What is lineation? What do you understand by banded rocks?

Q.09   Name 2 tributaries of Mahanadi river. What are the features of peninsular rivers?

Q.10.   Who gave Binary theory? How did moon originate. Explain?

Q.11   Give 2 examples of ferrous minerals. What is metallic minerals? Give its classification.

Q.12   What is a watershed? Differentiate between a Delta and Estuary.

Q.13   Who was the profoundar of nebular hypothesis? What is Nebular hypothesis? Explain in detail.

Q.14   Which hypothesis was given by Hoyle?

Q.15   Give the classification of sedimentary rocks.

Q.16   Explain the physical property of minerals.   (5×7=35)

Q.17   Explain the development of solar system.

Q.18   What are different types of drainage?

Q.19   Discuss Rock cycle.

Q.20   How Himalayan drainage system is formed?

Q.21   What are the stages in the evolution of the Earth? Explain each stage in brief.

Q.22   Discuss Brahmaputra river system.

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