St. Mary's School, Dwarka
Holiday Homework
Class: XII
Worksheet 4

General Instructions:

1) The work should be done neatly and systematically.

2) The given questions are to be done in your respective subject notebooks.

3) Attempt all questions.

Subject: English Core

Read the passage carefully.

Democracy, a paradigm of governance that has metamorphosed through millennia, stands as an exemplar of human political evolution. This sophisticated system, rooted in ancient Greek civilization, has burgeoned into a multifaceted framework that underpins contemporary society's foundational principles.

The quintessential elements of democracy encompass the sovereignty of citizens, who wield the power to shape their nation's trajectory through suffrage and civic engagement. This participatory mechanism ensures the perpetuation of egalitarian ideals, fostering an environment where diverse perspectives converge to forge collective decisions.

The intricate tapestry of democratic institutions encompasses various organs of governance, each serving as a counterbalance to potential autocratic tendencies. The doctrine of separation of powers - legislative, executive, and judicial branches - exemplifies the sophisticated checks and balances inherent in democratic systems. This tripartite distribution of authority mitigates the concentration of power, thereby safeguarding citizens' fundamental rights and liberties.

Contemporary democracy transcends mere electoral processes, embodying the zeitgeist of human rights, civil liberties, and social justice. The proliferation of democratic values has catalyzed unprecedented social mobility and economic prosperity, although challenges persist in achieving equitable distribution of resources and opportunities.

The advent of digital technology has revolutionized democratic participation, introducing novel platforms for civic discourse and political engagement. However, this technological renaissance has simultaneously engendered new challenges, including the proliferation of misinformation and the potential manipulation of democratic processes through cyber warfare.

As we navigate the complexities of the 21st century, democracy continues to evolve, adapting to emerging challenges while preserving its core principles. The resilience of democratic systems,

coupled with their capacity for self-correction and renewal, underscores their enduring relevance in shaping human civilization's future trajectory.

This dynamic system of governance, while imperfect, remains humanity's most successful experiment in collective decision-making and social organization, perpetually striving toward the ideals of justice, equality, and human dignity.

Based on the reading of the passage, answer the questions below.   (4)

  i. The passage discusses democracy as a "resilient" and "self-correcting" system. Which of the following scenarios would most challenge this characterization of democracy?   1

A) A peaceful transition of power after an election.
B) A judiciary overturning an unconstitutional law.
C) The manipulation of public opinion through algorithmic echo chambers.
 D) A referendum resulting in a majority-supported policy change.

ii. From the author's portrayal, what is the most plausible implication of the statement:
"Contemporary democracy transcends mere electoral processes"?   1

A) Elections are no longer necessary in modern democracies.
 B) True democracy requires ongoing engagement beyond voting.
 C) Civil liberties are a byproduct of economic systems.
 D) Judicial authority outweighs legislative authority in democracies.

iii. The passage presents democracy as a complex yet superior model of governance. Which criticism would most effectively counterbalance this view?   1

 A) Democracies often suffer from voter apathy and low participation.
 B) Autocracies have existed longer than democracies.
 C) Democratic leaders are always more ethical than autocrats.
 D) Separation of powers slows down decision-making.

iv. In the context of the author's argument, which of the following best represents a threat that is *unique* to 21st-century democracies compared to historical democratic systems?   1

A) Military coups disrupting democratic transitions.
 B) Misinformation campaigns leveraging algorithmic systems.
 C) Legislative corruption and lobbying.
 D) Ethnic and religious divisions influencing politics.

Q2. Read the following extract and answer the questions that follow. **(2)**

> In other words, the Tiger King is dead. The manner of his death. The manner of his death is of extraordinary interest. It can be revealed only at the end of the tale. The most fantastic aspect of his demise was that as soon as he was born, astrologers had foretold that one day the Tiger King would actually have to die.
>
> "The child will grow up to become the warrior of warriors, hero of heroes, champion of champions. But….."they bit their lips and swallowed hard. When compelled to continue, the astrologers came out with it. This is the secret which should not be revealed at all. And yet we are forced to speak out. The child born under this star will one day have to meet its death.

i. Complete the sentence appropriately. 1

The author's purpose in overshadowing, is to_____.

ii. How is the line, "the most fantastic aspect of his demise", an example of contrast? 1

Answer the following questions in 40-50 words. **(14)**

Q3. "That ain't money mister". Why did the ticket clerk utter these words? (The Third Level) 2

Q4. Why does the poet say that his thoughts about doing nothing should not be confused with 'total inactivity'? (Keeping Quiet) 2

Q5. What makes human beings love life inspite of pain and suffering? (A Thing of Beauty) 2

Q6. How does the poem, 'A Thing of Beauty' highlight the poet's immense faith in the Divine?
2

Q7. How did M. Hamel bid farewell to his students and the people of the town? 2

Q8. "All we have to fear is fear itself". What is the significance of this line? 2

Q9. Which two things does the poet's resurfacing of the childhood fear suggest? 2

Q10. Design a dress/ attire for your farewell. (You may use illustration, colours, fabric etc.) 5

Subject: Hindi Core

No. of questions: 10   M.M. 25

प्रश्न 1   निम्नलिखित पद्यांश पर आधारित प्रश्नों के उत्तर निर्देश के अनुसार दीजिए ः   .
(1×5 = 5)

आँसू से भाग्य पसीजा है, हे मित्र कहाँ इस जग में?

नित यहाँ शक्ति के आगे, दीपक जलते मग-मग में।

कुछ तनिक ध्यान से सोचो, धरती किसकी हो पाई ?

बोलो युग-युग तक किसने, किसकी विरूदावलि गाई ?

मधुमास मधुर रूचिकर है, पर पतझर भी आता है।

जग रंगमंच का अभिनय, जो आता सो जाता है।

सचमुच वह ही जीवित है, जिसमें कुछ बल-विक्रम है।

पल-पल घुड़दौड़ यहाँ है, बल-पौरुष का संगम है।

दुर्बल को सहज मिटाकर, चुपचाप समय खा जाता,

वीरों के ही गीतों को, इतिहास सदा दोहराता।

फिर क्या विषाद, भय चिंता जो होगा सब सह लेंगे,

परिवर्तन की लहरों में जैसे होगा बह लेंगे।

 (i) कवि ने किसे बलशाली माना है ?

   (क) समय को

   (ख) शक्ति को

   (ग) आँसू को

   (घ) मित्र को

(ii) काव्यांश के अनुसार रूचिकर क्या है?

   (क) पतझर

   (ख) ग्रीष्म

   (ग) शरद

   (घ) बसंत

(iii) कवि ने किसे जीवित माना है ?

   (क) बलवान को

   (ख) पहलवान को

   (ग) किसान को

   (घ) मुस्कान को

 (iv) इस संसार में समय किसको चुपचाप नष्ट कर देता है ?

(v) काव्यांश के अंत में कवि क्या कहते हैं?

प्रश्न 2 'सोशल मीडिया के लाभ व हानियाँ' विषय पर 100 से 120 शब्दों में अनुच्छेद लिखिए।   (5×1=5)

प्रश्न 3 टी.वी. खबरों के विभिन्न चरण कौन से हैं?   (2×1 = 2)

प्रश्न 4 ड्राई एंकर क्या है?   (2×1 = 2)

प्रश्न 5 'आलो आँधारि' की लेखिका बेबी हालदार और भक्तिन के व्यक्तित्व में आप क्या समानता देखते हैं?   (1½×1= 1½)

प्रश्न 6 'पैसे में पर्चेजिंग पावर है' स्पष्ट कीजिए।   (1½×1 = 1½)

प्रश्न 7 दिन का थका पंथी कैसे जल्दी-जल्दी चलता है?   (1½×1 = 1½)

प्रश्न 8 कवि ने पतंग के लिए किस प्रकार के विशेषणों का प्रयोग किया है?(1½×1 = 1½)

प्रश्न 9 यशोधर बाबू का रोज की क्या दिनचर्या थी?   (1×1 = 1)

गतिविधि ः

प्रश्न 10 अपने आस-पास के किसी वृद्ध या वृद्धा का चित्र खींचकर चिपकाइए व उनका साक्षात्कार लगभग 100 शब्दों में लिखिए।   (4×1=4)

Subject: Mathematics

No. of questions: 10   M.M. 25

Q1   Find the derivative of $\dfrac{\sqrt{x}\,(x+4)^{3/2}}{(4x-3)^{4/3}}$ w.r.t x.   2

Q2   If $x^m y^n = (x+y)^{m+n}$, prove that $\dfrac{dy}{dx} = \dfrac{y}{x}$.   2

Q3   Differentiate the following functions with respect to x:

(i) $x^{x^2-3} + (x-3)^{x^2}$ (ii) $y = x^{\sin x} + (\sin x)^x$ 2

Q4   Differentiate $\sin^{-1}(2x\sqrt{1-x^2})$ with respect to $\tan^{-1}\left(\dfrac{x}{\sqrt{1-x^2}}\right)$, if $-\dfrac{1}{\sqrt{2}} < x < \dfrac{1}{\sqrt{2}}$ 2

Q5   Differentiate $\tan^{-1}\left(\dfrac{1+ax}{1-ax}\right)$ with respect to $\sqrt{1+a^2x^2}$ 2

Q6   If $y = \log\left\{x + \sqrt{x^2+a^2}\right\}$, prove that $(x^2+a^2)\dfrac{d^2y}{dx^2} + x\dfrac{dy}{dx} = 0$ 3

Q7 $y = x^x$, prove that $\dfrac{d^2y}{dx^2} - \dfrac{1}{y}\left(\dfrac{dy}{dx}\right)^2 - \dfrac{y}{x} = 0$.   3

Q8   If x = a cos q + b sin q and y = a sin q - b cos q, prove that

$$y^2\dfrac{d^2y}{dx^2} - x\dfrac{dy}{dx} + y = 0$$ 3

Q9   If y = sin (sin x), prove that $\dfrac{d^2y}{dx^2} + \tan x \cdot \dfrac{dy}{dx} + y\cos^2 x = 0$ 3

Q10   If $x = \sin\left(\dfrac{1}{a}\log y\right)$, show that $(1-x^2)y_2 - xy_1 - a^2 y = 0$ 3

Subject: Physics

No. of questions: 10   M.M. 25

Objectives:

- Revision of concepts
- Application of the concepts to real life situations.
- Skills to carry out research work and develop scientific aptitude.

Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question

MAGNETIC EFFECTS OF CURRENT

Q 1. An electron and a proton are moving along the same direction with the same kinetic energy. When they pass through a uniform magnetic field perpendicular to the direction of their motion, they describe paths of the same radius. Is this statement true or false?   1

Q 2. Uniform electric and magnetic fields are produced pointing in the same direction. An electron is projected in the direction of the fields. What will be the effect on the kinetic energy of the electron due to the two fields?   1

Q 3. A charged particle with a charge q moves with a speed v along the x-axis. It enters a region of space where an electric field E along the y-axis and a magnetic field B are both present. The particle emerging from this region is observed to be moving along the x-axis. Obtain an expression for the magnitude of B in terms of v and E. Also, give the direction of B.   2

Q 4. A long wire is first bent into a circular coil of one turn and then into a circular coil of smaller radius having n turns. If the same current passes in both cases, find the ratio of the magnetic field produced at the centre in the two cases.   2

Q 5. Two wires of equal lengths are bent in the form of two loops. One of the loops is square-shaped whereas the other loop is circular. These are suspended in the uniform magnetic field, and the same current passes through them. Which loop will experience greater torque?   2

Q 6. Show that the far field of a solenoid resembles that of a bar magnet. Hence, define the magnetic moment of a solenoid.   2

Q 7. A particle of mass m and charge q moves at right angles to a uniform magnetic field. Plot a graph showing the variation of the radius of the circular path described by it with the increase in its (a) charge, (b) kinetic energy, where, in each case, other factors remain constant. Justify your answer.

2

Q 8. (i) Why are the pole pieces of a galvanometer made concave?
(ii) Which material is used to make permanent magnet transformer cores? Give two reasons. (1+2=3)

Q 9. A long cylindrical wire of radius Ro carries a current Io, which is uniformly distributed over its cross section. Derive an expression for the magnitude of the magnetic field inside and outside the wire. Plot a curve to show the variation of the magnetic field with radial distance. (3.5+1.5=5)

Q 10. Draw a labelled diagram and explain the construction and working of a moving coil galvanometer. Define its current and voltage sensitivity and explain how they can be increased.

(b) A galvanometer with a coil resistance of 5 ohms can tolerate a maximum current of 10mA. Explain how this can be converted into an ammeter of range 1A. (3+2=5)

Class 12 Worksheet 4

Subject: Chemistry

No. of questions: 10   M.M. 25

1. Why do transition metals exhibit variable oxidation states?   (2)

2. Explain why Zn^{2+} salts are white while Cu^{2+} salts are often colored.   (2)

3. What are lanthanoids? Give the general electronic configuration of lanthanoids.   (2)

4. Write the balanced chemical equation for the preparation of potassium dichromate ($K_2Cr_2O_7$) from chromite ore ($FeCr_2O_4$).   (3)

5. Explain the phenomenon of lanthanoid contraction. What are its consequences?   (3)

6. How is potassium permanganate ($KMnO_4$) prepared from MnO_2? Write the chemical equations involved.   (3)

7. Why do transition metals and their compounds often act as good catalysts?   (2)

8. Compare the chemical reactivity of lanthanoids and actinoids.   (2)

9. Give reasons for the following: (a) Transition metals generally form colored compounds. (b) EM^{2+}/M^0 for copper is exceptionally positive. (c) Scandium (Sc^{3+}) does not form colored compounds.   (3)

10. What are interstitial compounds? Why do transition metals form interstitial compounds readily?   (3)

Subject: Computer Science

No. of questions: 10   M.M. 25

Q1 Why is Python interpreted?   1

Q2 Can sequence operations such as slicing and concatenation be applied to dictionaries? Why?
                                                                                     1

Q3 Write the most appropriate list method to perform the following tasks and justify with the help of an example.   3
(a) Delete a given element from the list.
(b) Delete 3rd element from the list.
(c) Add an element in the beginning of the list.

Q4 Find errors, underline them and rewrite the same after correcting the following code:- 2

```
d1 = dict[]
i = 1
n = input ("Enter number of entries : ")
while i <= n :
    a = input ("Enter name:")
    b = input ("Enter age:")
    d1 (a) = b
    i = i + 1
l = d1.key []
for i in l :
    print (i, '\t', 'd1[ i ]')
```

Q5 The following code is not giving desired output. We want to input value as 20 and obtain output as 40. Could you pinpoint the problem?   1
```
 Number = input ( "Enter Number")
DoubleTheNumber = Number * 2
Print (DoubleTheNumber)
```

Q6 Figure out the problem with following code fragment. Correct the code and then print the output.   2
```
1. s1 = 'must'
2. s2 = 'try'
3. n1 = 10
4. n2 = 3 5. print (s1 + s2)
6. print (s2 * n2)
7. print (s1 + n1)
8. print (s2 * s1)
```

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Q7 If the addition of a new key:value pair causes the size of the dictionary to grow beyond its original size, an error occurs. True or false?   1

Q8 MCQ   (1x10=10)
1. Which of the following is an invalid variable?
(a) my_day_2
(b) 2nd_day
(c)Day_two
(d) _2

2. Which of the following is not a keyword?
(a) eval
(b) assert
(c) nonlocal
(d) pass

3. Which of the following cannot be a variable?
(a) __init__
(b) in
(c) it
(d) on

4. Which of these is not a core data type?
(a) Lists
(b) Dictionary
(c) Tuples
(d) Class

5. How would you write xy in Python as an expression?
(a) x^y
(b) x**y
(c) x^^y
(d) none of these

6. What will be the value of the expression?
14 +13 % 15
(a) 14
(b) 27
(c) 12
(d) 0

7. Evaluate the expression given below if A = 16 and B = 15.

A%B//A

(a) 0.0

(b) 0

(c) 1.0

(d) 1

8. What is the value of x?

x = int(13.25 4/2)

(a) 17

(b) 14

(c) 15

(d) 23

9. The expression 8/4/2 will evaluate equivalent to which of the following expressions:

(a) 8/(4/2)

(b) (8/4)/2

(c) 8//4//2

(d) (((8//4)/4)/2))

10. Which among the following list of operators has the highest precedence?

+ ,-,**,%, /,<< ,>> , |

(a) <<, >>

(b) **

(c) |

(d) %

Q9 Fill in the Blanks: ½ x4=2

a) In Python, the non-zero value is treated as _____ and zero value is treated as _____.

b) Keys of a dictionary must be _____.

c) In _____, the adjoining values in a sequence are compared and exchanged repeatedly until the entire array is sorted.

d) Logical operators are used to combine two or more _____ expressions.

Q10 State True or False   ½ x4=2

a) For any index n, s [: n] + s [n :] will give you original string s.

b) A dictionary can contain keys of any valid Python types.

c) The two statements x int(22.0/7) and x = int(22/7.0) yield the same results.

d) The given statement: x + 1 = x is a valid statement.

Subject: Biology

No. of questions: 10   M.M. 25

Q1. If an endosperm cell of an angiosperm contains 24 chromosomes, the number of chromosomes in each cell of the root will be   (1)
a) 8
b) 4
c) 16
d) 24

Q2. The true embryo develops as a result to fusion of   (1)
a) two polar nuclei of embryo sac
b) egg cell and male gamete
c) synergid and male gamete
d) male gamete and antipodals.

Q3. Coleoptile and coleorhiza are the protective sheaths _____covering _____and _____ respectively.
a) plumule, epicotyl   (1)
b) radicle, plumule
c) plumule, radicle
d) radicle, hypocotyl

Q4. Explain any two ways by which apomictic seeds get developed?   (2)

Q5. State two differences between incomplete dominance and co-dominance.   (2)
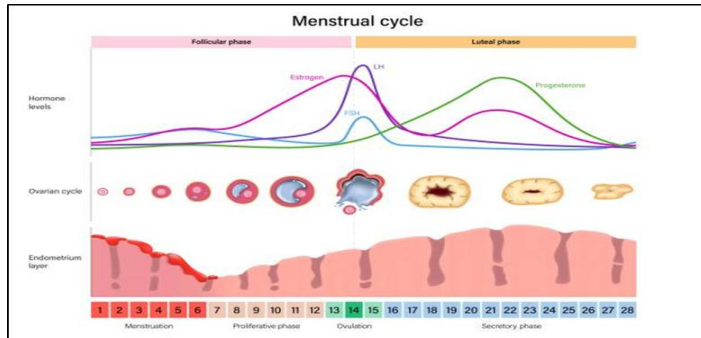
Q6. List three reasons why sexually transmitted infections are increasing in adolescents.   (3)

Q7. Explain Mendel's law of independent assortment with an example.   (3)

Q8. Draw a labelled diagram of a longitudinal section of an ovule.   (3)

Q9. A male child is diagnosed with colour blindness. His mother has normal vision but her

   father was colour blind.   (2+1+1=4)

   (i) Explain the inheritance of the disorder.

   (ii) What is the genotype of the mother?

   (iii) Is it possible for her daughter to be colour blind?

Q 10. (i) Explain the stages shown.

(ii) Explain the hormonal regulation involved.

(iii) State the function of any two hormones.   (2+2+1=5)

Activity : Calculation of dihybrid ratio by taking pea.

Subject: Informatics Practices

No. of questions: 8   M.M. 25

Q1 Write a Python code to create a DataFrame stock with appropriate column headings from the list given below:

[[101,'Gurman',98], [102,'Rajveer',95], [103,'Samar' ,96],[104,'Yuvraj',88]]   2

Q2 (a)Write a Python code to create a DataFrame 'Stock' by using list:

```
    Name                Price
0 Nancy Drew            150
1 Setter                180
2 Diary of a wimpy kid  225
3 Harry Potter          500
```
     2

(b) Write a Python code to create a DataFrame 'Stock' by using dictionary method:

```
Name                  Price
0 Nancy Drew          150
1 Setter              180
2 Diary of a wimpy kid  225
3 Harry Potter        500
```
     2

(c) Write a Python code to create a DataFrame 'Stock' by using Series method:

```
Name                  Price
0 Nancy Drew          150
1 Setter              180
2 Diary of a wimpy kid  225
3 Harry Potter        500
```
     2

Q3(a) Find output of following code
```
import pandas as pd
Year1={'Q1':[5000,10],'Q2':[8000,20],'Q3':[12000,30],'Q4':[18000,40]}
df=pd.DataFrame(Year1)
print(df)
```
     2

Q3(b) Find output of following code
```
import pandas as pd
Year1={'Q1':[5000,10],'Q2':[8000,20],'Q3':[12000,30],'Q4':[18000,40]}
totSales={1:Year1}
df=pd.DataFrame(totSales)
print(df)
```
     2

Q4 What will be the output of following code and Answer the following:
i. List the index of the DataFrame df
ii. List the column names of DataFrame df.   2

```
import pandas as pd
Year1={'Q1':5000,'Q2':8000,'Q3':12000,'Q4': 18000}
Year2={'A' :13000,'B':14000,'C':12000}
totSales={1:Year1,2:Year2}
df=pd.DataFrame(totSales)
print(df)
```

Q5 Consider the given DataFrame 'Stock':

Name	Price
0 Nancy Drew	150
1 Hardy boys	180
2 Diary of a wimpy kid	225
3 Harry Potter	500

Write suitable Python statements for the following:

i. Add a column called Special_Price with the following data: [135,150,200,440].

ii. Add a new book named 'The Secret' having price 800.

iii. Remove the column Price.

iv.Remove first and third rows from DataFrame   4

Q6 Consider the given DataFrame df:

	Q1	Q2	Q3	Q4
0	5000	8000	12000	18000
1	10	20	30	40

Write suitable Python statements for the following:

i. Add a column called Q5 with the following data: [2000,44].

ii. Add a new record with appropriate values.

iii. Remove the column Q2, Q4.

iv. Remove first and second rows from DataFrame.   4

Q7 Consider the following series named animal: 2

```
L          Lion
B          Bear
E      Elephant
T         Tiger
W          Wolf
dtype: object
```

Write the output of the command: print(animal[::-3])   1

Q8 Write the output of the given program:

```
import pandas as pd
S1=pd.Series([5,6,7,8,10],
index=['v','w',' x','y','z'])
l=[2,6,1,4,6]
S2=pd.Series(l,index=['z','y','a','w','v'])
print(S1-S2)
```

Subject: Business Studies

No. of questions: 10   M.M. 25

Q.1 Arnav has recently started a business to sell computers. He hired a shop in Nehru Place in New Delhi, where he assembles various components to make computers and supplies them as per order. He performs a series of composite but separate functions simultaneously and ensures that computers are delivered in time as per orders. These functions are performed by all managers at all times. The feature of management highlighted above is :   1

a) Management is a continuous process.

b) Management is pervasive.

c) Management is dynamic.

d) Management is a group activity

Q.2 'In order to be successful, an organisation must change itself and its goals according to the needs of the environment. Which characteristic of management is being highlighted here?   1

a) Management is all pervasive   b) Management is multi-dimensional

c) Management is a group activity   d) Management is a dynamic function

Q.3 Assertion (A): Ram is given the responsibility to produce 1000 Covid-19 Test Tubes per day, but he is not given the authority to purchase raw material. In absence of raw material in the store work could not be completed.

Reason (R): Ram cannot be blamed because he was not given the matching authority to complete the work on time.

Choose the correct option: 1

a) Both (A) and (R) are true and (R) is the correct explanation of (A)

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

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

d) (A) is false but (R) is true.

Q.4 "Every organization whether it is government owned, a privately owned business or a company in the private sector requires planning." Name and explain the feature of planning highlighted in the above statement.   1

Q.5 Alia Enterprises, a company was initially producing grinders and mixers. Now, with the changing scenario and emerging trends of working women there is a greater demand for a product which is more efficient and a multi-tasker. On analyzing the situation, the company decided to penetrate into the market for producing Food Processor.

a) Which feature of management is highlighted here?

b) Which level of management will take this decision?   1

Q.6 Bright Services is a taxi service provider. The company is targeting a revenue of 50 crore rupees this year.

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However with the passage of time it has found entrance of new service providers in the market which was not expected at one stage of time. It has a good team of technicians, drivers, software providers, etc.The company has decided to make it adaptable to such continuously changing circumstances. It knows that if it has to expand in new countries it will have to learn the basic differentiating factors like traffic rules, technological aspects, etc. Thus it understands that conditions are different in different countries.

Which features of Business Environment are discussed in the above case? Which force is discussed above? 3

Q.7   Explain with the help of an example 'differential piece wage system' given by Taylor. 3

Q.8   Two years ago, Madhu completed her degree in food technology. She worked for some time in a company that manufactured chutneys, pickles, and murabba. She was not happy in the company and decided to have her own organic food processing unit for the same. She set the objectives and the targets and formulated an action plan to achieve the same. One of her objectives was to earn a 10% profit on the amount invested in the first year. It was decided that raw materials like fruits, vegetables, spices, etc. will be purchased on three month's credit from farmers cultivating only organic crops. She also decided to follow the steps required for the marketing of the products through her own outlets. She appointed Mohan as the Production Manager who decided the exact manner in which the production activities were to be carried out. Mohan also prepared a statement showing the number of workers that will be required in the factory throughout the year. Madhu informed Mohan about her area wise sales target for different products for the forthcoming quarter. While working on the production table, a penalty of X 100 per day for not wearing caps, gloves, and apron were announced. Quoting lines from the above paragraph, identify and explain the different types of plans discussed. 4

Q.9   'Science is a systematised body of knowledge that explains certain general truths or the operation of general laws'. Based on the statement identify and state the characteristics of management that establish it as a science. 4

Q.10   Vignesh completed his MBA at a reputed Business School in Lucknow. He was impressed by the principles and techniques of scientific management developed by FW Taylor. On completing his MBA, he wanted to apply scientific management in his family's business of fast food chain of restaurants named 'Burger Mania'. His main goal was to reduce costs which increased output. To begin with, he wanted to develop a standard method which would be followed throughout the organisation. He investigated traditional methods through work study and unified the best practices. The standard method, i.e. the best way of doing the job was then develop taking into account all parameters right from the procurement of raw materials till the delivery of the final product to the customer. Vignesh also believed that each person should not only be scientifically selected but should also be given the required training to increase efficiency. For this, he set up a special training unit called 'Hamburger' in Bengaluru where the workers were given the required training to increase efficiency. At 'Hamburger' workers were given the required training to learn the best method. At the factory, the ingredients making up a burger word in strategically placed to reduce the time taken for excess movements. The Standard Time and other parameters were determined on the basis of work study and Vignesh rewarded the workers for meeting the standard output. Now, 'Burger Mania' has standardized process, raw material, time, machinery, product and working conditions that ensured the food they send out to their customers as the same high standards of excellence and level of quality in every chain of

franchisee.The application of scientific management to every aspect of restaurant operations led to Burger Mania's widespread success. Quoting the lines from the above, explain the principles and techniques of scientific management used by 'Burger Menia'.   6

Activity: Find real-world examples (from news, company websites, your school, etc.) for different types of plans: objectives, strategy, policy, procedure, rule, budget, programme, and project? For each example, briefly explain why you classified it that way.

Subject: Accountancy

No. of questions: 10   M.M. 25

Q.1 The Real object of Analysis of Financial Statement is …………   1
a. To assess the total liabilities of the firm
b. To assess the total expenses of the firm
c. To know about historical cost concept
d. To measure the financial strength of the business

Q.2 Bank overdraft is shown in the balance sheet under the ……….   1
a. Short Term Borrowings
b. Shareholders' Funds
c. non-current liabilities
d. Other Current Liabilities

Q.3 Why do we add back preliminary expenses to net profit while calculating cash flows from operating

   activities?   1

Q.4 The gross profit ratio of a company is 50%. State with reason whether the decrease in rent received by

   Rs 15,000 will increase, decrease or not change the ratio.   1

Q.5 How is Financial Statements Analysis useful to potential investors?   1

Q.6 What is meant by analysis of financial statement? Explain the disadvantages.   3

Q.7 X Ltd has a current ratio of 3: 1 and quick ratio of 2 :1. If the excess of current assets over quick

   assets as represented by inventory is Rs 40,000, calculate current assets and current liabilities.   3

Q.8 Calculate cost of Revenue from operations from the following information: Revenue from operations

   Rs.12,00,000, Sale Return Rs.80,000, operating expenses Rs.1,82,000, operating ratio 92%.   4

Q.9 Classify the following into non-current assets and current assets and give reasons for such classification:
                                                                                                          4

(i) A company has an operating cycle of 11 months and the expected period of realisation of trade receivables is 10 months.
(ii) A company has an operating cycle of 11 months and the expected period of realisation of trade receivables is 12 months.
(iii) A company has an operating cycle of 11 months and the expected period of realisation of trade receivables is 15 months.
(iv) A company has an operating cycle of 20 months and the expected period of realisation of trade receivables is 24 months.

Q.10 Prepare Cash Flow Statement from the following information: 6

Particulars	Note no.	31.3.2017	31.3.2016
Equity and liabilities			
Shareholder's Fund:			
Share capital		4,50,000	4,50,000
Reserves and Surplus		3,78,000	3,56,000
Non Current Liabilities			
Long Term Borrowings: Mortgage Loan		2,70,000	---
Current liabilities			
Trade Payables		1,34,000	1,68,000
Short term Provisions (provision for tax)		10,000	75,000
Total		12,42,000	10,49,000
II. Assets			
Non- current Assets			
Tangible Assets		3,20,000	4,00,000
Non Current Investment		60,000	50,000
Current Assets			
Current investments		17,000	19,000
Inventory		2,10,000	2,40,000
Trade Receivable		4,55,000 1,80,000	2,10,000
Cash and cash equivalents			1,30,000
Total		12,42,000	10,49,000

Class 12 Worksheet 4

Notes to Accounts

1. Reserves and Surplus

General Reserve	3,10,000	3,00,000
Surplus i.e. Balance in Statement of P/L	68,000	56,000
	3,78,000	**3,56,000**

Additional Information:

i) Investments costing Rs.8,000 were sold during the year for Rs.8,500

ii) Provision for Tax made during the year was Rs.9,000

iii) A part of the fixed assets costing Rs.10,000 was sold for Rs.12,000 during the year and profit was included in the Statement of Profit and Loss

iv) Dividend paid during the year amounted to Rs.40,000

Activity: Design a simple board game where students roll dice to land on cash inflow/outflow events (e.g., "Issued shares", "Bought machinery") and earn or lose cash tokens.

Subject: Economics

No. of questions: 10   M.M. 25

Q1. Explain the currency authority function of Central Bank.   2

Q2. Explain lender of the last resort function of the Central Bank.   2

Q3. Explain the banker to the government function of the Central Bank.   2

Q4. Explain the meaning of Cash Reserve Ratio and Statutory Liquidity Ratio.   2

Q5. State three main functions of commercial bank. Explain any one of them.   2

Q6. Explain any two functions of a Central Bank.   3

Q7. What is bank rate policy? How does it work as a method of credit control?   3

Q8. What are open market operations? How do these work as a method of credit Control?   3

Q9. State three methods of credit control used by the Central Bank.   3

Q10. Explain any two main functions of commercial banks.   3

Activity: Project Work
Guidelines for Project Work in Economics (Class XII)
The objectives of the project work are to enable learners to:
Probe deeper into theoretical concepts learnt in classes XI and XII
analyse and evaluate real world economic scenarios using theoretical constructs and arguments
Demonstrate the learning of economic theory
Follow up aspects of economics in which learners have interest
Develop the communication skills to argue logically
The expectations of the project work are that:
learners will complete only ONE project in each academic session
Project should be of 3,500-4,000 words (excluding diagrams & graphs), preferably hand-written
It will be an independent, self-directed piece of study
Scope of the project:
Learners may work upon the following lines as a suggested flow chart:
Choose a title/topic
Collection of the research material/data
Organization of material/data
Present material/data
Analysing the material/data for conclusion
Draw the relevant conclusion
Presentation of the Project Work
Expected Checklist:

Introduction of topic/title

Identifying the causes, consequences and/or remedies

Various stakeholders and effect on each of them

Advantages and disadvantages of situations or issues identified

Short-term and long-term implications of economic strategies suggested in the course of research

Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project file

Presentation and writing that is succinct and coherent in project file

Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.

Mode of presentation/submission of the Project:

S. No.	Heading	Marks Allotted
1.	Relevance of the topic	3
2.	Knowledge Content/Research Work	6
3.	Presentation Technique	3
4.	Viva-voce	8

Total 20 Marks

Class XII

Micro and Small Scale Industries Food Supply Channel in India

Contemporary Employment situation in India Disinvestment policy of the government

Goods and Services Tax Act and its Impact on GDP

Health Expenditure (of any state)

Human Development Index Inclusive Growth Strategy

Self-help group Trends in Credit availability in India

Monetary policy committee and its functions Role of RBI in Control of Credit

Government Budget & its Components Trends in budgetary condition of India

Exchange Rate determination – Methods and Techniques

Currency War – reasons and repercussions

Livestock – Backbone of Rural India Alternate fuel – types and importance

Sarwa Siksha Abhiyan – Cost Ratio Benefits Golden Quadrilateral- Cost ratio benefit

Minimum Support Prices Relation between Stock Price Index and Economic Health of Nation

Waste Management in India – Need of the hour

Minimum Wage Rate – approach and Application

Digital India- Step towards the future Rain Water Harvesting – a solution to water crises

Vertical Farming – an alternate way Silk Route- Revival of the past

Make in India – The way ahead Bumper Production- Boon or Bane for the farmer

Rise of Concrete Jungle- Trend Analysis Organic Farming – Back to the Nature

Any other newspaper article and its evaluation on basis of economic principles Any other topic

Subject: History

No. of questions: 10   M.M. 25

1. Define Zakat.   1

2. Define Sufism.   1

3. What was silsila?   1

4. What is Khanqah?   1

5. Explain the meaning of Sufi Silsila.   2

6. Why do thousands of devotees visit dargahs of Muslim saint?   2

7. Explain the features of Islamic religion which contributed to its spread through the sub-continent.   3

8. Mention any two universal architectural features of Mosque.   3

9. Why were shudras and women excluded from vedic learning in vedic period?   3

10. Identify the relationship between the Sufis and the state from the eighth to the eighteenth century.   8

Subject: Political Science

No. of questions: 10   M.M. 25

*Objective***:** - To enable the students to know about the inventions of new concepts in world politics and constitution of India.

- To develop 21st century managerial skills of co-ordination, self-direction and time management.
- To understand contemporary political issues in context to our past.
- To develop a global perspective and an international outlook.

Research Activity: - Research and collect the information on recent revolution of political ideas in the world and India, in the following areas.

- Comparison between NITI Aayog and Planning Commission and their contribution in India's Development.
- Health Epidemic – A new source of security threat

Assignment: - *Project Work*

Project Ideas

- Green politics, need of the hour
- Superpower – The American view of world.
- Is soft politics a novel way of resolving deadlocks?
- Political Impact on Indian Legislations.
- Political Impact on India's international standing.
- Indian political stand on United Nations General Assembly 2024.
- Relevance of SAARC as a forum of regional cooperation.
- Division of Germany with special focus on the construction and dismantling of the Berlin wall.
- CIS- Central Asian Republics.
- Arab Spring
- Crisis in Middle East with special focus on Operation Desert Storm, Operation Iraqi Freedom, Iraq today.
- European Union and BREXIT.
- BRICS
- India's Nuclear Policy.
- U.S. dominance in World politics in the Post-Cold War era.
- India's role in Non Aligned Movement.
- Civil Society Movements - Role and participation in India.
- Relevance of the United Nations in a Unipolar World.
- Understanding Resource Geopolitics and Environment degradation
- India's external relations -Critical analysis of the foreign policy of India especially with its immediate neighbours (Pakistan, China, Srilanka, Nepal, Myanmar)
- Popular movements in the Post-Independence era and their outcomes.
- Project on the role played by the regional aspirations in backing the secessionist and insurgency movement in India
- India's response to ASEAN as a dialogue partner.

- · India-Pakistan Relations in contemporary world.
- · QUAD

GUIDELINES FOR THE PROJECTS:
It must be emphasized that the process of doing the project is as important as the final project.
Once the project/projects are chosen, there should be a process of brainstorming to make out a draft/structure for the project before embarking on research.
Internet sites could be referred, but care must be taken in selecting, using and citing these sites. Avoid plagiarism
Marks to be awarded for content and originality and not for decorative elements and embellishments.
Projects must be the original work of the student.
Project may be supported by- Data, fact sheets, maps, articles, newspaper clips
Maximum of 25-30 page projects.

Q.1   What is Human Rights Watch? Describe its main contribution to the field of Human Rights.   2

Q.2   Describe the military actions taken during the Clinton era.   2

Q.3   Describe the current state of Israel.   2

Q.4   'Pakistan has witnessed both civilian and democratic system'. Explain.   2

Q.5   State any six post-Cold War changes that have necessitated reforms to make the UN work better.   2

Q.6   'Reforming the UN means restructuring of the Security Council'. Do you agree with this statement?   Give arguments for or against this position.   2

Q.7   Nuclear weapons as deterrence of defence have limited usage against contemporary security threats to state. Explain the statement.   2

Q.8   Write a short note on the role and the limitations of SAARC as a forum for facilitating economic cooperation among the South Asian countries.   3

Q.9   Examine Indo-Pak relations in the light of recent developments.   3

Q.10 Discuss India's relations with China.   5

Subject: Geography

No. of questions: 10   M.M. 25

Q1 Which of the following is not a push factor of migration?   1
A. Poor living conditions
B. Political turmoil
C. Epidemics
D. Pleasant climate

Q2. Which one of the following is not a fact?   1
A. Human population increased more than ten times during the past 500 years.
B. It took 100 years for the population to rise from 5 billion to 6 billion
C. Population growth was high in the first stage of demographic transition.
D. Population growth was very slow in the first stage of demographic transition

Q 3. "Asia has many places where people are few and few places where people are many" Above mentioned
    remark about uneven distribution of Asia as well as world population is given by   1
A. Dudley Stamp
B. G.B. Cressey
C. Hartshorne
D. Griffith Taylor

Q4 Migrants who move into a new place are called   1
A. Emigrants
B. NRI
C. Immigrants
D. Migrant by place of residence

Q5 Which of the following pair is not matched correctly?   1
REGIONS FACTOR OF HIGH DENSITY
A. Kobe- Osaka region in Japan Presence of industries
B. Mediterranean Regions Pleasant climate
C. Ganga Plains Scenic beauty
D. Mega cities Good civic amenities and employment

Q6. What do you understand by the term quaternary and quinary activities?   2

Q7. What are Highways? Give brief description of the highways of the world   3

Q8. Describe the three-stage model of Demographic Transition Theory.   5

Q9. Compare Commercial livestock rearing and Nomadic herding   5

Q10. Define Population growth. Explain the difference between positive and negative growth of the population

5

Activity: GIS in Everyday Life

Topic: *Geographical Information System (GIS)*

Students to explore Google Earth or GIS-based tools and identify:

- Their home's coordinates

- Nearby physical and human features

- Changes in land use using time-lapse tools
  Objective: Introduce digital geography tools.
  Outcome: Hands-on experience with GIS and spatial data.

Subject: Psychology

No. of questions: 10   M.M. 25

Q1. Define self.   1

Q2. In value assessment, we try to determine the _____ values of a person.   1

Q3. Define personality.   2

Q4. Confident people can solve problems, confront the things that frighten them and nurture themselves are all qualities of which Behavioural aspect of self. Write a note on it.   2

Q5. Rita is learning music. Many times, she has to miss her favourite serial as she has to go for music classes. Also, she wakes up early to practice despite her love for sleep. Which concept from the chapter, self and personality, can you link to this situation?   2

Q6. Which concept of self is based on Bandura's social learning theory? Write a note on it.   2

Q7. If a psychologist is evaluating you by asking your response to ink blots, which form of assessment is the psychologist using? List any two features of this form of assessment.   3

Q8. Is there a difference between self-actualisation and a fully functioning individual? Support your answer with the help of examples.   4

Q9. Distinguish between the type and trait approach of personality. Give suitable examples.   4

Q10. What is meant by delay in gratification? Discuss the technique used for self-control.   4

Activity: Activity: Understanding self:
> Please complete the following sentences starting with "I am"
> Time now: _____
> I am _____
> I am _____
> I am _____
> I am _____
> I am _____
> I am _____
> I am _____
> I am _____
> I am _____
> I am _____
> Time when you finished_____.

Subject: Music

No. of questions 7   **M.M. 10**

Select the correct answer.

1.Jodi String of Tanpura are tuned in the swar   1
(a) Pa
(b) Re
(c) Sa
(d) Ma

2.Sangeet Ratnakar was written in :   1
(a) 10th Century
(b) 12th Century
(c) 13th Century
(d) 17th Century

3. Sandhi Prakash Ragas are sung during :   1
(a) 10' O Clock to 4' O clock
(b) 7' O Clock to 10' O Clock
(c) 4 O clock to 7' O clock
(d) 4' O Clock to 10 'O Clock

4. Who is the recipient of the title 'Aftabe Mausiki'?   1
(a) Bade Ghulam Ali Khan
(b) Abdul Karim Khan
(C) Tansen
(d) Faiyaz Khan

5. Choose the correct statements-   1
(a) Dhamar Tala is played with Vilambit Khayal
(b) Jhaptal has 10 Matras and 4 Vibhags
(c) Rupak has Khali on its beat
(d) Chhota Khayl is sung is Vilambit Laya
Choose the correct option
      i.   A & C
      ii.   A & D
      iii.   A & B
      iv.   B & C

6. Which present day artist of Tarana or Khayal you are most impressed with? Critically analyse
his/her Style.   2.5
7. Describe any two of the following: Murchhana, Gram, Gamak   2.5

ACTIVITY; PRACTICE ALANKARS

Subject: Painting

General Instructions: Please do practical work on A-3 sheet with 2 cm borders. It is for 20 marks. Theory needs to be done in the notebook. It is for 5 marks

MM 25

Q1. Make a poster on gender sensitivity
Q2. Explain the contributions of different sub-schools within the Rajasthani school of painting

Subject: Physical Education

No. of questions: 10   M.M. 25

Q.1. What is menstrual dysfunction? Write in brief.   2

Q. 2. Explain the term Menarche.   2

Q.3. What are the symptoms of female athletes triad?   2

Q. 4. Explain eating disorder.   2

Q.5. Explain procedure, benefits and contraindiction of Ardhamatseyendrasana.   2

Q.6. Write down the procedure and contraindications of Pavanmuktasana in detail.   2

Q.7. Explain Katichakrasana and its benefits.   2

Q.8. What do you mean by obesity? Explain asanas which prevent obesity.   3

Q.9. Discuss the technique and benefits of Bhujangasana.   3

Q.10. Explain measures for the prevention of back pain.