St. Mary's School, Dwarka
Holiday Homework
Class: XII
Worksheet 3

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

No. of Questions: 10   **M.M:25**

 Read the passage carefully.   **(5)**

Albert Einstein, whose groundbreaking theories revolutionised our understanding of the universe, exemplifies the pinnacle of scientific genius. His seminal work on relativity, particularly the Theory of Special Relativity ($E=mc2$), fundamentally altered our perception of space, time, and the relationship between matter and energy. This Swiss-German physicist's intellectual journey began with his "thought experiments," where he would visualise complex scenarios that challenged conventional Newtonian physics.

 Einstein's quantum theory of light, which posited that light behaves both as waves and particles (photons), earned him the Nobel Prize in Physics in 1921. This paradigm-shifting discovery demonstrated the phenomenon of wave-particle duality, a cornerstone of quantum mechanics. His subsequent work on the photoelectric effect corroborated this revolutionary concept, illustrating how light particles could dislodge electrons from metal surfaces.

 The General Theory of Relativity, perhaps his most profound contribution, proposed that gravity is not a force but rather a consequence of spacetime curvature. This esoteric concept suggested that massive objects distort the fabric of spacetime, creating what we perceive as gravitational attraction. The theory's validation came through astronomical observations during a solar eclipse, which confirmed that light rays indeed bend around massive objects, precisely as Einstein had predicted.

 Despite his extraordinary intellectual achievements, Einstein maintained a philosophical outlook that emphasized the importance of imagination in scientific inquiry. His famous assertion that "imagination is more important than knowledge" reflects his belief in the power of creative thinking to unlock the universe's mysteries.

Based on the reading of the passage, answer the questions below. **(5)**

Q1. What does the phrase *"esoteric concept"* in the passage suggest about General Relativity   2

Q2. Which phenomenon did Einstein's General Theory of Relativity predict?   1
 A. The speed of light
 B. Black holes and gravitational lensing
 C. Nuclear fission
 D. The uncertainty principle

Q3. What was Einstein's philosophical stance on quantum mechanics?   1
 A. He fully embraced its probabilistic nature
 B. He believed it was incomplete but useful
 C. He had no opinion on the matter
 D. "God does not play dice with the universe."

Q4. Choose the correct synonym for *"corroborated"* as used in the passage: 1
 A. denied
 B. confirmed
 C. questioned
 D. modified

Q5. Read the extract and answer the questions.   **(3)**

> He said I was unhappy. That made my wife kind of mad, but he explained that he meant the modern world is full of insecurity, fear, war, worry and all the rest of it, and that I just want to escape. Well, who doesn't? Everybody I know wants to escape, but they don't wander down into any third level at Grand Central Station. But that's the reason, he said, and my friends all agreed. Everything points to it. they claimed. My stamp collecting, for example, that's a 'temporary refuge from reality.' Well, maybe, but my grandfather didn't need any refuge from reality; things were pretty nice and peaceful in his days, from all I hear, and he started my collection

i. Why did Sam's verdict make Charley's wife 'mad'?   **1**
 A. It made it difficult for her to accept that Charley would consult a psychiatrist.
 B. It seemed to suggest to her that she was the cause of Charley's unhappiness.
 C. It made her aware of Charley's delicate state of mind.
 D. It offended her that Charley and Sam collectively accused her.

ii. Select the option that signifies the condition of people of the 'modern world' mentioned in the extract.   **1**

(1) unsure
(2) lazy
(3) offensive
(4) anxious
(5) afraid

A. (1) and (3)
B. (2) and (5)
C. (2), (3) and (4)
D. (1), (4) and (5)

iii. Select the option that displays a cause-effect set. 1

	cause	effect
A.	Charley's stamp collecting	Wandering into the third level

	cause	effect
B.	Everybody wants to escape	Modern world full of insecurity

	cause	effect
C.	Charley's wandering into the third level	Charley's stamp collecting

	cause	effect
D.	Modern world full of insecurity	Everybody wants to escape

Q6. Read the extract and answer the questions. **(2)**

 riving from my parent's
home to Cochin last Friday
morning, I saw my mother,
beside me,
doze open- mouthed, her face
ashen like that
of a corpse,…

i. What is the primary purpose of the poet recalling the memory of the drive with the mother? 1
A. provide a detailed account of her experience
B. demonstrate the correct idea of her mother's age
C. evoke a powerful image of the mother's ageing
D. convey her own emotions during the drive

ii. What does the phrase beside me emphasise? 1

Q7. You are Aradhya/ Aradhana of 26, E Block Gautam Vihar, Hyderabad-37. Write a letter to the Editor, Times of India, Hyderabad expressing your concern about the decrease in the number of birds in Mysore. (120- 150 words) **(5)**

Q8. Your mother, Shagun Gupta, has received an invitation from a nearby Women's Wellness Centre in your city to participate in a two-day Detox Programme at its centre on 21st -22nd June, 20XX . Write a formal reply accepting the invitation in about 50 words. **(4)**

Q9. Answer the following question in 40-50 words. **(2)**
What does the poet observe about her mother while riding in the car?

Q10. Collect 5 stamps, paste them on an A-4 size pastel sheet and write about their release in 25- 30 words each. **(4)**

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)

किस भाँति जीना चाहिए किस भाँति मरना चाहिए,

सो सब हमें निज पूर्वजों से याद करना चाहिए।

पद-चिह्न उनके यत्नपूर्वक खोज लेना चाहिए,

निज पूर्व गौरव-दीप को बुझने न देना चाहिए।

आओ मिलें सब देश-बांधव हार बनकर देश के,

साधक बनें सब प्रेम से सुख शांतिमय उद्देश्य के।

क्या सांप्रदायिक भेद से है ऐक्य मिट सकता, अहो,

बनती नहीं क्या एक माला विविध सुमनों की कहो॥

प्राचीन हो कि नवीन, छोड़ो रूढ़ियाँ जो हों बुरी,

बनकर विवेकी तुम दिखाओ हंस जैसी चातुरी।

प्राचीन बातें ही भली हैं-यह विचार अलीक है,

जैसी अवस्था हो जहाँ, वैसी व्यवस्था ठीक है॥

(i) जीवन जीना और मरना हमें किससे सीखना चाहिए?

   (क) माता से

   (ख) पिता से

   (ग) पुरखों से

   (घ) समाज से

(ii) देश का हार कैसे बन सकता है?

   (क) फूलों से

   (ख) बंधुओं से

   (ग) जातियों से

   (घ) व्यक्तियों से

(iii) हंस जैसी चतुराई दिखाने के लिए क्या आवश्यक है?

   (क) विवेक

   (ख) बुद्धि

   (ग) व्यवहार

   (घ) सभ्यता

(iv) रूढ़ियों को त्यागने की बात कवि ने क्यों कही है?

(v) कौन सा विचार अलीक हैं?

प्रश्न 2 'स्वावलंबन है नारी का गहना' विषय पर 100 से 120 शब्दों में अनुच्छेद लिखिए।

$$(5×1=5)$$

प्रश्न 3 मुद्रित माध्यमों में लेखन में किन बातों का ध्यान रखना चाहिए ? $(2×1=2)$

प्रश्न 4 रेडियो के लिए समाचार लेखन में अंकों को लिखने के मामले में खास सावधानी क्यों रखनी चाहिए? $(2×1=2)$

प्रश्न 5 महादेवी जी ने भक्तिन के बारे में क्या लिखा है? $(1½×1= 1½)$

प्रश्न 6 लेखक ने पाठ का नाम 'बाजार दर्शन' क्यों रखा होगा? $(1½×1 = 1½)$

प्रश्न 7 कवि जग को अपने से अलग कैसे मानता है? $(1½×1 = 1½)$

प्रश्न 8 कवि ने पतंग के बारे में क्या विशेषताएँ बताई है? $(1½×1 = 1½)$

प्रश्न 9 यशोधर बाबू दफ्तर पैदल क्यों जाते थे? $(1×1=1)$

परियोजना कार्यः

प्रश्न 10 कवि हरिवंशराय बच्चन की किसी एक प्रसिद्ध रचना का सार लगभग 150 शब्दों में चित्र सहित लिखिए। $(4×1=4)$

Subject: Mathematics

No. of questions: 10   M.M. 25

Q1   Differentiate the following functions w.r.t. x :   2

        (i) $\sin(x^2+1)$ (ii) $e^{\sin x}$ (iii) $\log \sin x$

Q2   Differentiate the following functions w.r.t. x :   2

      (i) e^{e^x} (ii) $\log_7 (\log_7 x)$ (iii) $\log_x 2$

Q3   If $y = \cos^{-1}(2x) + 2\cos^{-1}\sqrt{1-4x^2}, 0 < x < \dfrac{1}{2}$, find $\dfrac{dy}{dx}$ 2

Q4   If $y = \tan^{-1}\left(\dfrac{\sqrt{1+x}-\sqrt{1-x}}{\sqrt{1+x}+\sqrt{1-x}}\right)$, find $\dfrac{dy}{dx}$ 2

Q5   If $y = \cos^{-1}\left\{\dfrac{2x-3\sqrt{1-x^2}}{\sqrt{13}}\right\}$, find $\dfrac{dy}{dx}$ 2

Q6   Differentiate the following with respect to x:

      (i) $\cos^{-1}(\sin x)$ (ii) $\sin^{-1}\left(\dfrac{2^{x+1}}{1+4^x}\right)$ 3

Q7   If $x\sqrt{1+y}+y\sqrt{1+x}=0$ and x ¹ y, prove that $\dfrac{dy}{dx}=-\dfrac{1}{(x+1)^2}$ 3

Q8   If $\cos^{-1}\left(\dfrac{x^2-y^2}{x^2+y^2}\right)=\tan^{-1}a$, prove that $\dfrac{dy}{dx}=\dfrac{y}{x}$ 3

Q9   If sin y = x sin (a +y), prove that $\dfrac{dy}{dx} = \dfrac{\sin^2(a+y)}{\sin a}$ 3

Q10   If $\sqrt{1-x^2} + \sqrt{1-y^2} = a(x-y),$ prove that $\dfrac{dy}{dx} = \sqrt{\dfrac{1-y^2}{1-x^2}}$ 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

1. Four charges are arranged at the corners of a square ABCD as shown in the figure. The force on the charge kept at the centre O is   1
   (a) Zero (b) along the diagonal BD   (c) along the diagonal AC   (d) perpendicular to side AB

2. An electron experiences a force $(1.6 \times 10^{-16}N)\ \hat{\imath}$ in a electric field $\vec{E}$.The electric field is $\vec{E}$ 1
   (a) $\left[1.0 \times 10^3 \frac{N}{C}\right]\hat{\imath}$ (b) $-\left[1.0 \times 10^3 \frac{N}{C}\right]\hat{\imath}$ (c) $\left[1.0 \times 10^{-3} \frac{N}{C}\right]\hat{\imath}$ (d)$-\left[1.0 \times 10^{-3} \frac{N}{C}\right]\hat{\imath}$

3. Case Study Based: Electric field strength is proportional to the density of lines of force i.e., electric field strength at a point is proportional to the number of lines of force cutting a unit area element placed normal to the field at that point. As illustrated in given figure, the electric field at P is stronger than at

   Questions:.
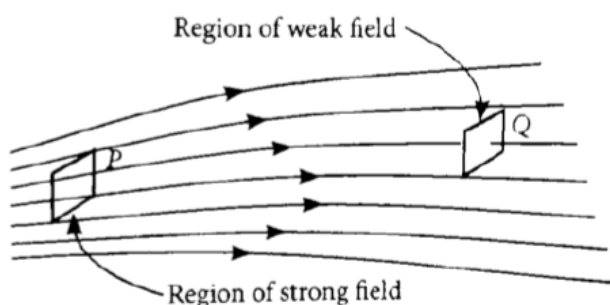
   (i)   Electric lines of force about a positive point charge are   1
       (a) radially outwards
       (b) circular clockwise
       (c) radially inwards
       (d) parallel straight lines

   (ii)   Which of the following is false for electric lines of force?   1
       (a) They always start from positive charge and terminate on negative charges.
       (b) They are always perpendicular to the surface of a charged conductor.

(c) They always form closed loops.

(d) They are parallel and equally spaced in a region of uniform electric field.

(iii) Which one of the following patterns of electric line of force is not possible in field due to stationary charges? 1
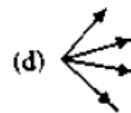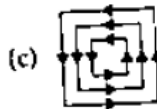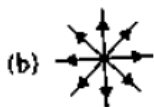
(iv) Electric field lines are curved 1

(a) in the field of a single positive or negative charge

(b) in the field of two equal and opposite charges.

(c) in the field of two like charges.

(d) both (b) and (c)

4. A metal sphere of radius 10cm is charged so as to have a potential of 50V on its outer surface. Find potential at the centre of the sphere. 2

5. Four point charges Q, q, Q and q are placed at the corners of a square of side 'a' as shown in the figure. Find the resultant electric force on a charge q kept at the center of the square. 2
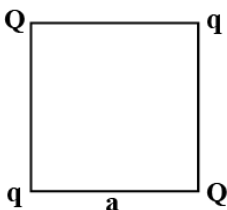
6. Find the ratio of the potential differences that must be applied across the parallel and series combination of two capacitors C_1 and C_2 with their capacitances in the ratio 1:2 so that the energy stored in the two cases becomes the same. 2

7. Two charges +q and –q are kept at $(-x_1, 0)$ and $(+x_1, 0)$ respectively in the x – y plane. Find the magnitude and direction of the net electric field as well as electric potential at the origin point (0, 0).

2

8. Use Gauss's law the electric field due to a uniformly charges infinite plane sheet. What is the direction of field for positive and negative charge densities? 3

9. Find the equivalent capacitance between points A and B if the capacitance of each capacitor is in microfard. 3
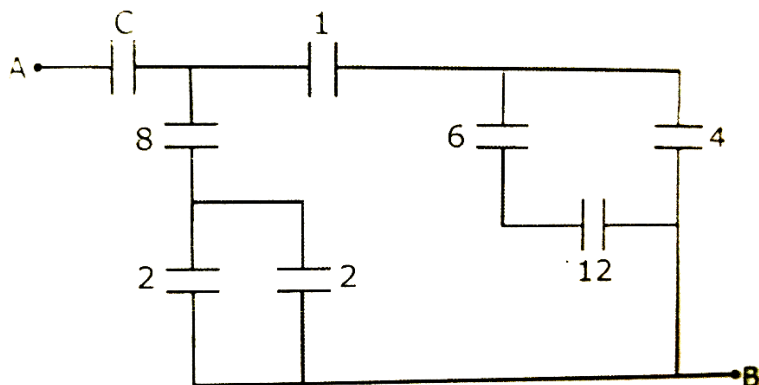
10. (i)Define dipole moment and give its SI unit. Derive the expression for the torque acting on a dipole placed in an external electric field

(ii) What is the dipole moment for a dipole having charges of −4C and +4C, separated by a distance of 0.01m? (3+2=5)

Subject: Chemistry

No. of questions: 10   M.M. 25

1. Define the rate of a chemical reaction. Write the units for the rate of reaction in terms of pressure for a gaseous reaction.   2

2. For the reaction: $2N_2O_5(g) \rightarrow 4NO_2(g) + O_2(g)$ The rate of formation of $NO_2(g)$ is $2.8 \times 10^{-3} Ms^{-1}$. Calculate the rate of disappearance of $N_2O_5(g)$.   2

3. What is the difference between the order and molecularity of a reaction?   2

4. The rate law for a reaction is given by rate $=k[A]^2[B]$.

(a) What is the order of the reaction?   1
(b) How does the rate of reaction change if the concentration of A is doubled?   1

5. Derive the integrated rate law for a zero-order reaction.   3

6. A first-order reaction takes 40 minutes for 30% decomposition. Calculate the half-life ($t_{1/2}$) of the reaction. (Given: $\log 10=1$, $\log 7=0.845$)   3

7. Explain the effect of temperature on the rate of a reaction. How is this effect quantitatively represented? 3

8. What is activation energy? How does a catalyst affect the activation energy and hence the rate of a reaction?   3

9. Distinguish between elementary and complex reactions. Give one example for each.   2

10. Write the Arrhenius equation and explain the terms involved. What is the significance of the pre-exponential factor (A)?   3

Subject: Computer Science

No. of questions: 12   M.M. 25

Q1. What is a function in Python?   1

Q2. What keyword is used to define a function in Python?   1

Q3. What is the difference between a built-in function and a user-defined function?   1

Q4. What will be the output of type(print)?   1

Q5. Write a Python function to calculate the square of a number.   2

Q6. Differentiate between parameters and arguments in functions.   2

Q7. What is the purpose of the return statement in a function?   2

Q8. Write a function to find the factorial of a number using a loop.   3

Q9. Write a function that takes a string and returns the number of vowels in it.   3

Q10. Write a function to check whether a number is prime or not.   3

Q11. Define a function that takes a list of numbers and returns the maximum and minimum numbers from the list.   3

Q12. Create a menu-driven program using functions that lets the user: 3
(a) Add two numbers
(b) Subtract two numbers
(c) Multiply two numbers
(d) Exit

Subject: Biology

No. of questions: 10   M.M. 25

Q1. The source of gonadotropin LH and its corresponding function is   (1)
a) anterior pituitary, ovulation
b) anterior pituitary, Graafian follicle formation
c) hypothalamus, ovulation
d) hypothalamus, Graafian follicle formation

Q2. The outermost and inner most wall layers of microsporangium in an anther are respectively   (1)
a) endothecium and tapetum
b) epidermis and endodermis
c) epidermis and middle layer
d) epidermis and tapetum

Two statements are given: one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.
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

Q3. Assertion: The genes on a chromosome are physically linked.   (1)
Reason: The number of linkage groups in an organism is equal to their haploid number of chromosomes.

Q4. Why apple is called a false fruit? Which part of flower forms the fruit?   (1+1=2)

Q5. What stimulates pituitary to release the hormone responsible for parturition? Name the hormone.   (2)

Q6. A normal visioned woman, whose father is colour blind, marries a normal visioned man. What would be the

probability of her sons and daughters to be colour blind. Explain with the help of Pedigree chart.   (3)
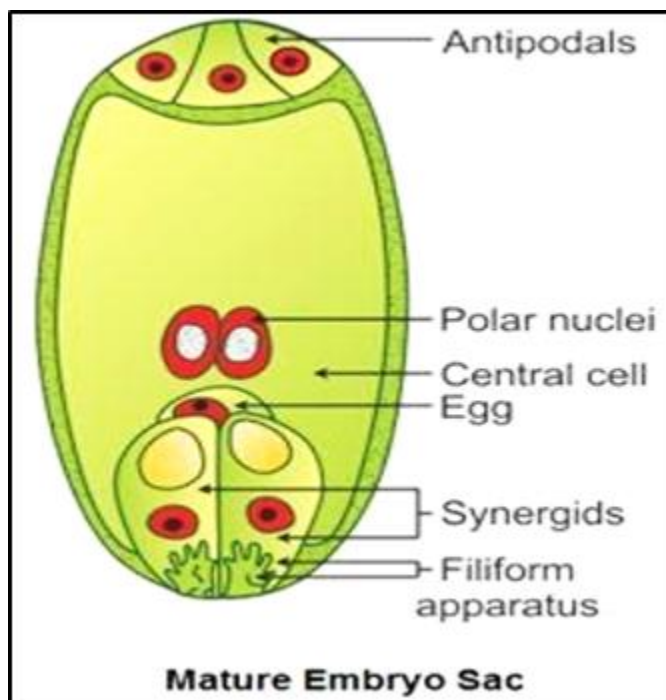
Q7. Explain any three advantages the seeds offer to angiosperms.   (3)

Q8. State the functions of
a) Corpus Luteum
b) Endometrium
c) Sperm tail.   (3)

Q9. Observe the figure and answer the following questions   (1+2+1=4)

Mature Embryo Sac

a) In the embryos of a typical dicot and a grass, which are the true homologous structures?

b) Normally one embryo develops in one seed but when an orange seed is squeezed many embryos of different shapes and sizes are seen. Mention how it has happened.

c) How many nuclei are present in a fully developed male gametophyte of flowering plants?

Q10. a) Explain the menstrual phase in a human female. State the levels of ovarian and pituitary

hormones during this phase.

b) Why is the follicular phase in the menstrual cycle also referred to as the proliferative

phase Explain.   (3+2=5)

Activity: Population density by Quadrat method

Subject: Informatics Practices

No. of questions: 7   M.M. 25

Q1   What is the function of Modem? Name any two components required for net-working.   2

Q2   Explain the purpose of a router and repeater.   2

Q3   What is the difference between the following: 2x3=6

a) HTTP and FTP

b) Message Switching and Packet Switching in networking

c) DNS and URL?

Q4   Write one advantage of star topology network? Also, illustrate how five (5) computers can be connected to each other using star topology of network.   1+2=3

Q5   Intelligent Hub India is a knowledge community aimed to uplift the standard of skills and knowledge in the society. It is planning to setup its training centres in multiple towns and villages pan India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as given.

As a network consultant, you have to suggest the best network related solution for their issues/problems raised in (i) to (iv) keeping in mind the distance between various locations and given parameters.   4
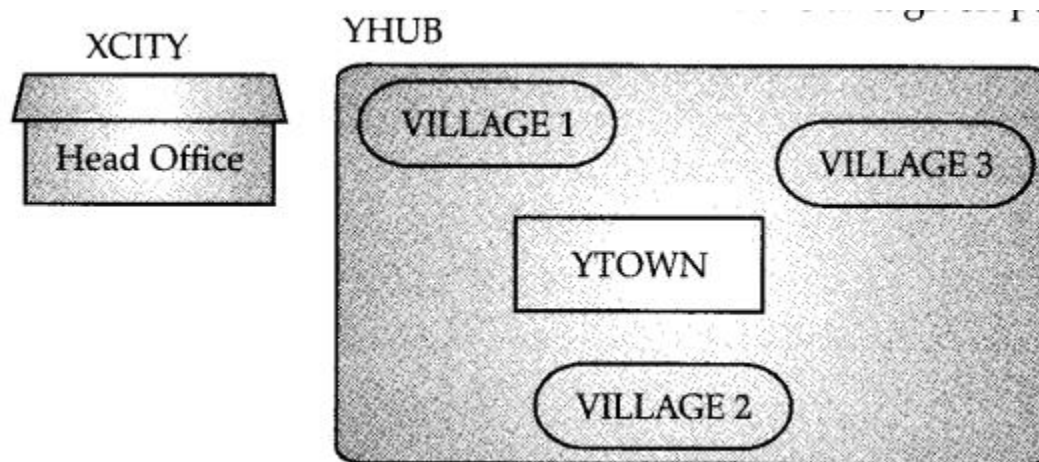
Shortest distance between various locations:

VILLAGE 1 To YTOWN	2 KM
VILLAGE 2 To YTOWN	1.2 KM
VILLAGE 3 To YTOWN	3 KM
VILLAGE 1 To VILLAGE 2	3.5 KM
VILLAGE 1 To VILLAGE 3	4.5 KM
VILLAGE 2 To VILLAGE 3	3.5 KM
CITY Head office to YHUB	30 KM

Class 12 Worksheet 3

Number of computers installed at various locations are as follows:

YTOWN	100
VILLAGE 1	10
VILLAGE 2	15
VILLAGE 3	15
CITY OFFICE	5

Note:

• In Villages, there are community centres, in which one room has been given as training center to this organization to install computers.

• The organization has got financial support from the government and top IT companies.

1. Suggest the most appropriate location of the SERVER in the YHUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer.

2. Suggest the best wired medium and draw the cable layout (location to location) to efficiently connect various locations within the YHUB.

3. Which hardware device will you suggest to connect all the computers within each location of YHUB?

4. Which server/protocol will be most helpful to conduct live interaction of Experts from Head office and people at YHUB locations?

Q6 :   Rehan School, in Mumbai is starting up the network between its different wings. There are four Buildings named as SENIOR, JUNIOR, ADMIN and HOSTEL as shown below: 4
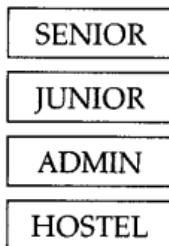
SENIOR

JUNIOR

ADMIN

HOSTEL

The distance between various buildings is as follows:

The distance between various buildings is as follows:

ADMIN TO SENIOR	200m
ADMIN TO JUNIOR	150m
ADMIN TO HOSTEL	50m
SENIOR TO JUNIOR	250m
SENIOR TO HOSTEL	350m
JUNIOR TO HOSTEL	350m

Number of Computers in Each Building :

SENIOR	130
JUNIOR	80
ADMIN	160
HOSTEL	50

1. Suggest the cable layout of connections between the buildings.
2. Suggest the most suitable place (i.e., building) to house the server of this school, provide a suitable reason.
3. Suggest the placement of the following devices with justification.
   o Repeater
   o Hub/Switch
4. The organisation also has inquiry office in another city about 50-60 km away in hilly region. Suggest the suitable transmission media to interconnect to school and inquiry office out of the following :
   o Fiber optic cable
   o Microwave
   o Radiowave

Q7 SONA Inc. is planning to connect its Bengaluru Office Setup with its Head Office in Delhi. The Bengaluru Office G.R.K. international Inc. is spread across and area of approx. 1 square kilometer, consisting of 3 blocks – Human Resources, Academics and Administration.
You as a network expert have to suggest answers to the four queries (i) to (iv) raised by them.
Notes : Keep the distance between blocks and number of computers in each block in mind, while providing them the solutions.   4
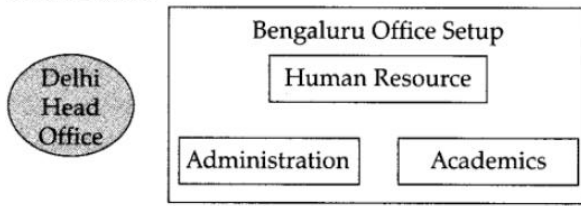
Shortest distances between various blocks:

Human Resources to Administration	100 m
Human Resources to Academics	65 m
Academics to Administration	110 m
Delhi Head Office to Bengaluru Office Setup	2350 km

Number of computers installed at various blocks are as follows:

BLOCK	No. of Computers
Human Resources	155
Administration	20
Academics	100
Delhi Head Office	20

1. Suggest the most suitable block in the Bengaluru Office Setup, to host the server.
   Give a suitable reason with your suggestion.

2. Suggest the cable layout among the various blocks within the Bengaluru Office Setup for connecting the Blocks.

3. Suggest a suitable networking device to be installed in each of the blocks essentially required for connecting computers inside the blocks with fast and efficient connectivity.

4. Suggest the most suitable media to provide secure, fast and reliable data connectivity between Delhi Head Office and the Bengaluru Office Setup.

Subject: Business Studies

General Instructions:

No. of questions: 10   M.M. 25

Q.1 At times, a business may concentrate on producing goods with fewer resources but cannot achieve
   the targeted production. In such a case, the business is said to be: 1

a) Effective but not efficient   b) Efficient but not effective
c) Both effective and efficient   d) Neither effective nor efficient

Q.2 'SORT-IT Ltd.' is a leading software development company. The company is satisfying the diverse needs
of it's employees. Its employees are given competitive salaries and perks. They have been given chance for
their personal growth and development. Identify the objective of management being met by 'SORT-IT Ltd.'

                                                                                           1

a) Social   b) Personal
c) Organisational   d) Both Social and Personal

Q.3 The manager of an organisation always undermines the employee's performance because he don't like him.
Identify the principle of management violated by manager.   1
a) Unity of command
b) Subordination of individual interest to general interest.
c) Unity of directio
d) Equity   1

Q.4 Competition in the market can also upset financial plans, sales targets have to be revised accordingly,
   cash budget also needed to be modified. Identify the limitation of planning.   1
Q.5 Why is it said that principles of management are less than perfect?   1
Q.6 A recent rate cut in the interest on loans announced by the Banks encouraged Amit, a science student of
Progressive School to take a loan from State Bank of India to experiment and develop cars to be powered by fuel
produced from garbage. He developed such a car and exhibited it in the Science Fair organized by
Directorate of Education. He was awarded first prize for his invention.
Identify and explain the dimensions of business environment discussed in the above case.   3

Q.7 Pawan is working as a Production Manager in CFL Ltd. which manufactures CFL bulbs. There is no
class-conflict between the management and workers. The working conditions are very good. The company is
earning huge profits. As a policy, the management shares the profits earned with the workers because they believe
in the prosperity of the employees. State the principle of management described in the above paragraph.   3

Q.8 Bitcoin is a cryptocurrency and worldwide payment system. It is the first decentralized digital currency,
as the system works without a central bank or single administrator. The network is peer-to-peer and transactions
take place between users directly, without an intermediary. These transactions are verified by network nodes
through the use of cryptography and recorded in a public distributed ledger called a blockchain. Bitcoin was

invented by an unknown person or group of people under the name Satoshi Nakamoto and released as opensource software in 2009. The money can only be tracked when it is converted into cash. This public way of managing transactions has created the possibility of a huge revolution in the banking sector across the world. Identify and explain any two dimensions of the business environment being referred to in the above case.   4

Q.9 Neeraj is selected for the post of a software developer in an IT Company. On the first day of his joining Mehul, his project manager tells Neeraj that during the course of his work he will come across many such opportunities which may tempt him to misuse his powers for individual or family's benefit at the cost of the larger general interest of the company. In such situations, he should rather exhibit exemplary behaviour as it will raise his stature in the eyes of the company. Also, for interacting with anyone in the company on official matters, he should adopt the formal chain of authority and communication. In the context of the above case identify and explain the various principles of management that Mehul is advising Neeraj to follow while doing his job.   4

Q.10 In 2015, Naveen left his luxurious life in Mumbai, where he worked as a manager for Blue Birds Ltd. He shifted to Begampur, Chhattisgarh to fulfil his grandmother's dream of converting their 25-acre ancestral land into a fertile farm. For this, he set out specific goals along with the activities to be performed to achieve the goals. Every activity was a challenge since he was clueless about farming. He learnt every activity from filling the land to sowing the seeds. To aid farmers he launched his own company 'Innovative Agriculture Solutions Pvt. Ltd'. It was difficult initially as no one trusted an urban youth telling farmers about farming. But when everything was discussed in detail the farmers started taking interest. He wanted to ensure that future events meet effectively the best interests of the company. Through sales forecasting, he prepared an annual plan for production and sales. He also found that the farmers grew the only paddy, which was an activity of 3-4 months and the land remained idle for the rest 8-9 months of the year. He not only identified but evaluated various alternatives through which the farms could be utilised for the remaining months of the year. Through correct foresight and logical and systematic thinking based on analysis of all facts, all alternatives were examined and evaluated. He presented a plan to the farmers, where after harvesting paddy, vegetables could be grown. The above case highlights the features of one of the functions of management. By quoting lines from the above identify and explain these features.   6

Activity: Describe a personal experience (at home, in a school event, with friends, or in a game) where you either consciously used or clearly observed a specific principle of management in action. What was the situation, which principle was involved, and what was the outcome? Present your "managerial moment" in a short narrative.

Subject: Accountancy

No. of questions: 10   M.M. 25

Q.1 When analysis is made on the basis of Published statements, reports and information it is known as…..   1
   a. Horizontal analysis   b. Internal Analysis
   c. External analysis   d. Vertical Analysis

Q.2 Analysis of Financial statements suffers from the limitation of window dressing which means….   1
   a. All of these
   b. may overvalue closing stock to show higher profits
   c. hide some vital information
   d. show items at incorrect value to portray better profitability

Q.3 Escorts Ltd. engaged in the business of manufacturing tractors invested Rs.40,00,000 in the shares of a Car
   manufacturing Company. State with reason whether the dividend received on this investment will be cash
   flow from operating activities or Investing activities.   1

Q.4 How will you show cash credit in cash flow statement?   1

Q.5 Will the bank deposit with 100 days of maturity be included in cash and cash equivalent? Give reason.   1

Q.6 Differentiate between horizontal analysis and vertical analysis.   3

Q.7 What is Financial Analysis? Explain its advantages.   3

Q.8 Classify the liabilities given below as Non-current Liabilities and Current Liabilities giving reasons for such
   classification: 4

Particulars	Operating Cycle (In Months)	Expected Period of Payment (In Months)
Trade Payables	10	8
Trade Payables	10	12
Trade Payables	10	15
Trade Payables	18	15

  Q.9 The quick ratio of a company is 2 : 1. State giving reasons, (for any four) which of the following would
   improve, reduce or not change the ratio   4
  (i)Purchase of machinery for cash
  (ii)Purchase of goods on credit
  (iii) Sale of furniture at cost
  (iv)Sale of goods at a profit
  (v)Cash received from debtors

Q.10 Read the following hypothetical text and answer the given questions on the basis of the same:
Aashna, an alumnus of CBSE School, initiated her start up Smart pay, in 2015. Smart pay is a service platform that processes payments via UPI and POS, and provides credit or loans to their clients.. During the year 2021-22, Smart pay issued bonus shares in the ratio of 5:1 by capitalising reserves.
The profits of Smart pay in the year 2021-22 after all appropriations was ₹ 7,50,000. This profit arrived after taking into consideration the following items: -   6

Particulars	Amount (₹)
Interim Dividend paid during the year	90,000
Depreciation on Machinery	40,000
Loss of Machinery due to fire	20,000
Insurance claim received for Loss of Machinery due to Fire	10,000
Interest on Non-Current Investments received	30,000
Tax Refund	20,000

Additional Information:

Particulars	31.3.22 (₹)	31.3. 21(₹)
Equity Share Capital	12,00,000	10,00,000
Securities Premium Account	3,00,000	5,00,000
General Reserve	1,50,000	1,50,000
Investment in Marketable Securities	1,50,000	1,00,000
Cash in hand	2,00,000	3,00,000
Machinery	3,00,000	2,00,000
10% Non-Current Investments	4,00,000	3,00,000
Bank Overdraft	2,50,000	2,00,000
Goodwill	30,000	80,000
Provision for Tax	80,000	60,000

(i) Goodwill purchased during the year was ₹ 20,000.

(ii) Proposed Dividend for the year ended March 31, 2021 was ₹ 1,60,000 and for the year ended March 31, 2022 was ₹ 2,00,000.

You are required to:

1. Calculate Net Profit before tax and extraordinary items.

2. Calculate Operating profit before working capital changes.

3. Calculate Cash flow from Investing activities.

4. Calculate Cash flow from Financing activities.

5. Calculate closing cash and cash equivalents

Activity:

: Jumbled word quiz

1. Example of inventories   EOLOS LSOOT

2. Limitation of financial Analysis   NODWWI ESNRSIGD

3. Main heading of Equity and Liabilities   EARHS TNILPAPIAOC NYOEM NENDGPI
                                                 ELNLOTMTA

4. Example of current Investment   ERLABTAEKM ETIUSSERCI

5. Example of other current liability   NCURTER TMRISAIUTE FO OGNL MTER
                                              DTSEB

Subject: Economics

No. of questions: 10   M.M. 25

Q1. What are externalities? Give an example of a positive externality and its impact on welfare of the people.   2

Q2. Explain the expenditure method of estimating National Income.   2

Q3. Explain how 'distribution of Gross Domestic Product' is a limitation in taking Gross Domestic Product
   as an index of welfare.   2

Q4. Give the meaning of factor income to abroad and factor income from abroad. Also give an example of each. 2

Q5. Explain how 'non-monetary exchanges' are a limitation in taking domestic product as an index of welfare? 2

Q6. Distinguish between domestic product and national product. When can domestic product be more than
    the national product?   3

Q7. Explain why subsidies are added to and indirect taxes deducted from domestic product at market price
    to arrive at domestic product at factor cost?   3

Q8. How will you treat the following while estimating domestic product of India? Give reasons.   3

i Rent received by a resident Indian from his property in Singapore.
ii Profits earned by a branch of an American Bank in India.
iii Salaries paid to Koreans working in Indian embassy in Korea

Q9. Is net export a part of NFIA? Explain.   3

Q10 Distinguish between Real Gross Domestic Product and Nominal Gross Domestic Product. Which of
    these is a better index of welfare of the people and why?   3

**Activity: Interview-Based Research – Conduct interviews with family members or elders to
 understand how economic changes (like rationing in the 1950s, bank nationalization in 1969, or
digital banking today) impacted their lives.**

Subject: History

No. of questions: 10   M.M. 25

1. Define Saguna & Nirguna form of worship.   1

2. Who were Alvars?   1

3. Name the major anthology composed by the Alvars.   1

4. Who started Lingayat tradition?   1

5. Mention any two sources to know about Bhakti and Sufi traditions from 8th century to 18th century. 2

6. How did Karaikkal Ammaiyar become the greatest figure of Nayanar tradition? Explain.   2

7. Mention the three ideas of Brahmanical system challenged by the Lingayats.   3

8. The Message of Guru Nanak Devji was based on divinity. Mention any two aspects of it.   3

9. Explain the teachings of Kabir. How did he describe the ultimate reality through his poems?   3

10. Identify the relationship of the Alvars and Nayanars of Tamil Nadu with 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

·   Politics of Color – Indian and global context
·   Rising economic power - CHINA
·   Emergency 1975 – Saving 'INDIRA'
·   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

Class 12 Worksheet 3

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 was the "Operation Enduring Freedom" run by the United States of America?	2
Q.2	Explain the economic and military influence of the European Union.	2
Q.3	What are the factors responsible for conflicts in political relations of Indo-Pakistan?	2
Q.4	Write a brief not on ILO (International Labour Organisation)	2
Q.5	Highlight any four factors which justify India's claim to a permanent seat in the U.N. Security Council.	2
Q.6	Mention two areas each of cooperation and disagreement between India and Bangladesh.	2
Q.7	What were the major consequences of the Shock therapy on the old system of social welfare of USSR?	2
Q.8	What are the constraints on American hegemony today? Which one of these do you expect to get more important in the future?	3
Q.9	Examine the political and economic diplomatic influence of EU.	3
Q.10	Explain "Hegemony as Soft Power".	5

Class 12 Worksheet 3

<u>Subject: Geography</u>

No. of questions: 3   M.M. 25

Q1. In political outline map of world mark the following features-   ½ x 20=10
1. Major Sea Ports.
2. Europe: North Cape, London, Hamburg
3. North America: Vancouver, San Francisco, New Orleans
4. South America: Rio De Janeiro, Colon, Valparaiso
5. Africa: Suez, Durban, and Cape Town
6. Asia: Yokohama, Shanghai, Hong Kong, Aden, Karachi, Kolkata
7. Australia: Perth, Sydney, Melbourne

Q2. In a political map of world mark the major airports of the world-   ½ x 20=10
1. Asia: Tokyo, Beijing, Mumbai, Jedda, Aden
2. Africa: Johannesburg & Nairobi
3. Europe: Moscow, London, Paris, Berlin, and Rome
4. North America: Chicago, New Orleans, Mexico City
5. South America: Buenos Aires, Santiago
6. Australia: Darwin and Wellington

Q3. In the world political map mark the following features   (5)
1. Country with the highest and the lowest HDI in the world
2. Industrial regions of the world -Ruhr region, Silicon Valley, Appalachian region, Great lakes region
3. The largest country in each continent in terms of area

Activity:.   Completion of Practical record file- as instructed in class

Subject: Psychology

No. of questions: 10   M.M. 25

Q1. Shweta has been writing for the school magazine and wants to pursue journalism. Which intelligence is her skill reflecting?   1

Q2. _____ are enduring beliefs about an ideal mode of behaviour.   1

Q3. High ability, creativity and commitment are found in individuals with intelligence?   2

Q4. Does heredity influence intelligence?   2

Q5. Write a note on the test that can be given only to literate groups based on the type of items.

2

Q6. Shirin learnt an answer and was able to recall it exactly the way it had been learnt. According to Arthur Jensen, what level of learning is she using?   2

Q7. Psychological attributes are multi-dimensional. Describe any three such attributes.   3

Q8. What are some of the erroneous practices associated with intelligence testing?   4

Q9. Which intelligence is associated with Indian culture? Write a detailed note on the same.   4

Q10.Explain "Maslow's humanistic approach, keeping in mind an individual who is feeling low.   4

Activity: Prepare project file(Case Profile) suggested format for preparing a case profile

1. **Introduction**

2. **Identification of data**

3. **Case History**

4. **Concluding comments**

Class 12 Worksheet 3

Subject: Physical Education

No. of questions: 10   M.M. 25

Q.1.Explain the causes of Scoliosis.   2

Q. 2. Define the causes of Knock-knee?   2

Q.3. What are the causes of Bow leg?   2

Q. 4. Discuss about the precautions and causes of Flat feet.   2

Q. 5. Explain precautions and causes for Lordosis.   2

Q. 6. What are precautions and symptoms of Round Shoulders?   2

Q. 7. What is the curvature of spinal bones? Describe briefly.   2

Q.8. Describe the social factors of women participation in sports.   3

Q. 9. Give three suggestions to promote women participation in sports.   3

Q.10.Explain the reasons for the less participation of women players in sports.   5

Subject: Music

No. of questions: 7

Select the correct answer. **M.M.10**

1. Number of strings in a Tanpura   1

(a) 3

(b) 4

(c) 5

(d) 7

2.The birth year of Ustad Bade Ghulam Ali Khan is   1

(a) 1902

(b) 1904

(c) 1907

(d) 1910

3.'Tali' of Jhaptal falls on beats   1

(a) 1, 5, 13

(b) 1, 3, 8

(c) 1, 6, 11

(d) 4, 6, 9

4. Smooth glide from one note to another is called   1

(a) Alankar

(b) Tana

(c) Meend

(d) Kan

5. How many Murchhanas are produced from each Gram   1

(a) 21

(b) 24

(c) 7

(d) 6

6. Give a brief account of Sangeet Ratnakar   2.5

7. Description of Prescribed Talas along with Tala Notation with Thah, Dugun, Tigun and Chaugun of Dhamar Taal.   2.5

 ACTIVITY: PRACTICE TAAL DHAMAR

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. Draw and paint a landscape that you see outside your window.

Q2. Describe the main characteristics if the Rajasthani school of painting