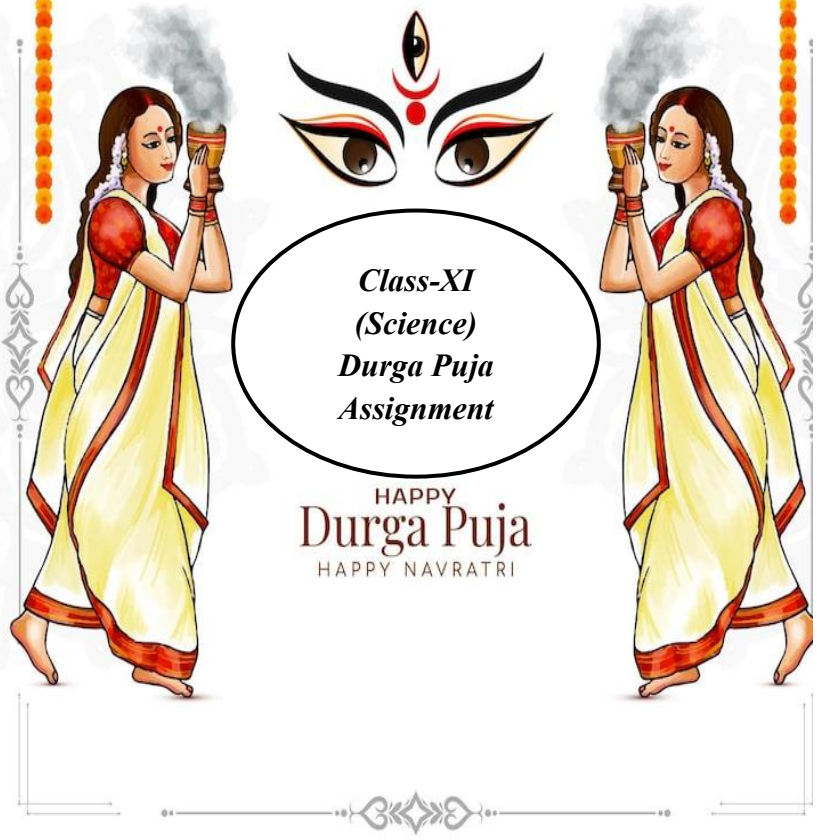
Delhi Public School, Chas Bokaro

Session-2026-2027



Class-XI
(Science)
Durga Puja
Assignment

English

A. The constellation Orion is associated with the legend of Osiris, the god of the afterlife.

Find out the astronomical descriptions and legends associated with the following.

(i) Ursa Major (Saptarishi mandala)

(ii) Polaris (Dhruva tara)

(iii) Pegasus (Winged horse)

(iv) Sirius (Dog star)

(v) Gemini (Mithuna)

Instructions

For each constellation or celestial object, include the following:

1.**Astronomical Description:** Explain what it is, where it is located in the night sky and any important features.

2.Mythological or Cultural Legend: Describe the story, belief or legend associated with it. You may refer to Greek mythology, Indian traditions or other relevant cultures.

3.Scientific Significance: Explain any interesting scientific fact, such as its brightness, location, role in navigation or importance in observing the sky.

4.Visual Representation: Paste a relevant picture or draw a neat, labelled diagram of the constellation or celestial object.

5.Literary Connection: Where appropriate, explain how its legend or symbolism relates to a theme, character, image or idea found in a literary text you have studied.

B. Look up the Internet or an encyclopedia for information on the following theories.

(i) Quantum theory

(ii) Theory of relativity

(iii) Big Bang theory

(iv) Theory of evolution

Instructions

For each theory, include the following:

A. Introduction to the Theory
Explain the theory in simple, accurate language. Mention the scientist or scientists associated with its development, where relevant.

B. Main Idea and Scientific Significance
Describe what the theory explains and why it is important.

C. Connection with Literature
Examine whether any concept, theme or implication of the theory can be connected to a poem, play, short story, novel or other literary text studied in class.

Maths

Read the following text carefully and answer the questions that follow:

1. The given table shows the 10 most famous engineering private colleges of India with their respective fee structure of 4 years Bachelor of Technology course. The Budget of Ram is 6 lakhs and budget of Sri is 4 lakhs.

Private College	Fee structure (4 Years course)
Birla Institute of Technology & Science	11.57 Lakhs
SRM University	9 Lakhs
Manipal Institute of Technology	7 Lakhs
AMITY University	10 Lakhs
Jaypee Institute of Information Technology	6 Lakhs
LPU University	6.8 Lakhs
Thapar Institute of Technology	8 Lakhs
Kalinga Institute of Technology	4 Lakhs
Vellore Institute of Technology	9 Lakhs
Chandigarh University	3.3 Lakhs

1 Sri has taken an education loan of 3 lakhs to increase his overall budget. Find the set of college in which Ram can take admission but Sri cannot. (1)
2 Ram has taken an education loan of 2 lakhs to increase his overall budget. Find the number of colleges in which he can take admission after raising his budget. (1)

3 If Sri and Ram want to take admission in the same college. Find the set of college in which both Sri and Ram can take their admission. (2)

OR

1. Sri has a total budget of 4 lakhs and she wanted admission in the famous college. Will she able to take admission in the colleges given in table. Find the set of college in which she can take admission. (2)
2. In science practical class, students used to perform experiments, one - day group A of class 11th have the following experiment results: A solution of 10% boric acid is to be diluted by adding a 4% boric acid solution to it. The resulting mixture is to be more than 5% but less than 8% boric acid. (2)



If we have 750 litres of the 10% solution, then:

1 Find the quantity of the 4% solution that has to be added will lie between. (1)

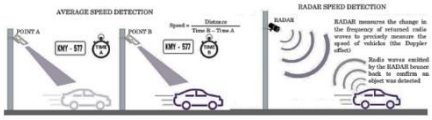
2 In an experiment, a solution of hydrochloric acid is to be kept between 30 and 35 degrees Celsius. What is the range of temperature in degree Fahrenheit if the conversion formula is given by, $C=\frac{5}{9}$ (F - 32) where C and F represent the temperature in degree Celsius and degree Fahrenheit, respectively? (1)

3 Solve for x: - 8x + 3≥ 27 and - 13x + 5 ≥ 57 (2)

OR

Show the inequality on the number line: x ≤ - 42 (2)

3. The traffic police has installed Over Speed Violation Detection (OSVD) system at various locations in a city. These cameras can capture a speeding vehicle from a distance of 300 m and even function in the dark.



A camera is installed on a pole at the height of 5 m. It detects a car travelling away from the pole at the speed of 20 m/s. At any point, x m away from the base of the pole, the angle of elevation of the speed camera from the car C is θ .

On the basis of the above information, answer the following questions:

1 Expressθ in terms of height of the camera installed on the pole and x. **(1)**

2 Find$\frac{d\theta}{dx}$. **(1)**

3

a. Find the rate of change of angle of elevation with respect to time at an instant when the car is 50 m away from the pole. **(2)**

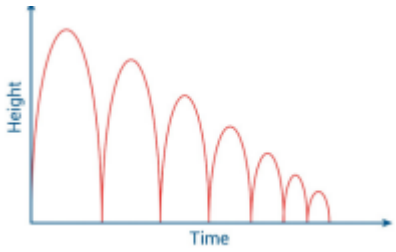
OR

b. If the rate of change of angle of elevation with respect to time of another car at a distance of 50 m from the base of the pole is $\frac{3}{101}$ rad/s, then find the speed of the car. **(2)**

4. The Rebounding Ball Experiment A physics student drops a highly elastic superball from the roof of a building 80 meters high. Every time the ball hits the ground, it rebounds to 3/4 (or 75%) of the height from which it fell. The ball continues to bounce until it eventually comes to rest.

Based on the above information, answer the following questions:

i. What is the height reached by the ball after the first rebound?
ii. ii. Calculate the specific height the ball reaches after the 2nd rebound.
iii. iii. Calculate the total vertical distance the ball travels before coming to rest.
iv. iv. The student repeats the experiment with a different ball (a tennis ball) dropped from the same 80m height. This tennis ball is less elastic and only rebounds to half of its previous height. Calculate the total distance this new ball travels before coming to rest.



PHYSICS

Q.1 A solid sphere of mass M and radius R is divided into two unequal parts. The smaller part having mass M/8 is converted into a sphere of radius r and the larger part is converted into a circular disc of thickness t and radius 2R. If I_1 is moment of inertia of a sphere having radius r about an axis through its centre and I_2 is the moment of inertia of a disc about its diameter, Find ratio of their moment of inertia I_2 / I_1.

Q.2 A ball of mass 0.2 kg is thrown vertically upwards by applying a force by hand. If the hand moves 0.2 m while applying the force and the ball goes up to 2 m height further, find the magnitude of the force. (take, g =10 ms-2.)

Q.3 A parachutist after bailing out falls 50 m without friction. When the parachute opens, it decelerates at 2 m/s2. He reaches the ground with a speed of 3 m/s. At what height, did he bailout?

Q.4 A car is standing 200 m behind a bus, which is also at rest. The two start moving at the same instant but with different forward accelerations. The bus has acceleration 2m/s2 and the car has acceleration 4m/s2. The car will catch up with the bus after a time ?

CHEMISTRY

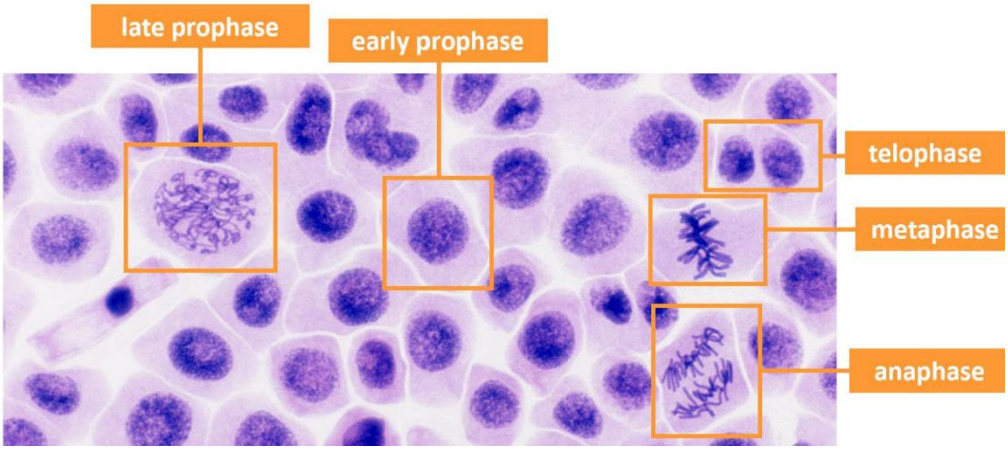
1. Explain molecular orbital theory in detail. Draw the molecular orbital diagram for o_2 and N_2.

2. What do you mean by hybridisation. Also discuss the shape, geometry for the different molecule upto electron pair no. 7.

3. Discuss the regular and exceptional variation for atomic radii, electron gain enthalpy and electron affinity with example.

4. Explain Vanderwal's radii metallic radii and covalent radii.

BIOLOGY



Case Study 1.

A student observed actively dividing cells in the root tip of an onion under a microscope. In one cell, chromosomes were arranged at the equatorial plate, and spindle fibres were attached to their kinetochores. In another cell, sister chromatids were moving towards opposite poles. The student also learned that DNA replication occurs before mitosis and that meiosis produces haploid cells from diploid cells.
During an experiment, a chemical was introduced that prevented spindle fibre formation. The chromosomes could not segregate normally, affecting the completion of cell division.

1. The cell in which chromosomes are arranged at the equatorial plate is most likely in:
A. Prophase B. Metaphase C. Anaphase D. Telophase

2. If a diploid cell with $2n=16 n=16$ chromosomes undergoes normal mitosis, the chromosome number in each daughter cell will be:
A. 8 B. 16 C. 32 D. 4

4. Assertion (A): DNA replication takes place during the S phase of interphase.
Reason (R): During the S phase, the DNA content of the cell doubles, while the chromosome number generally remains unchanged.

Choose the correct option:
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.

5. Assertion (A): Meiosis I is called reductional division.
Reason (R): Homologous chromosomes separate during anaphase I, reducing the chromosome number by half in the daughter cells.

Choose the correct option:
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.

2**. Short type Questions**

a. Why are cyanobacteria classified under Monera and not Plantae?

b. What would happen to an ecosystem if decomposer fungi disappeared?

c. What would happen to ATP production if oxygen supply to a cell suddenly stopped?

d. A microorganism has no nuclear membrane but possesses a cell wall. How would you classify it, and what additional feature could help identify its group?

e. A plant cell produces ethanol and carbon dioxide when oxygen is unavailable. Identify the pathway and explain why it yields little ATP.

PHE

1. Write four objective of Anatomy and physiology in sports.

2. Explain in details about Health-related fitness test.

IP

. Write a python program to find vowels are present as an element of the list or not.

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```
*
* *
* * *
* * * *
* * * * *
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GRAPHICS

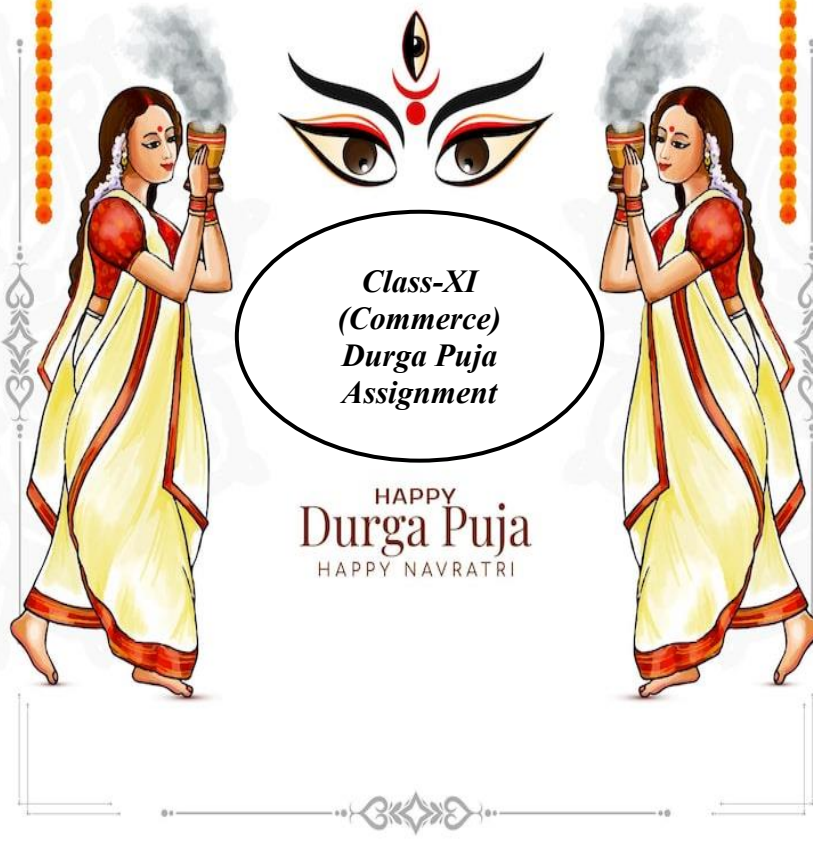
Draw & Paint five Layout in your Graphics File on the following Topics.

a) Festivals b) Sports c) Nature d) Fantasy World e) Yoga

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Delhi Public School, Chas Bokaro

Session-2026-2027



Class-XI
(Commerce)
Durga Puja
Assignment

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Find out the astronomical descriptions and legends associated with the following.

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PHE

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ACCOUNTANCY

Q1. A customer directly deposited ₹5,000 into the bank account of a firm. In the Bank Reconciliation Statement starting with "Debit Balance as per Cash Book", this item will be:

(a) Deducted

(b) Added

(c) Ignored

(d) Added twice

Q2. If wages paid for the installation of new machinery worth ₹3,000 are debited to the Wages Account, the rectifying entry will be:

(a) Debit Machinery A/c and Credit Wages A/c

(b) Debit Wages A/c and Credit Machinery A/c

(c) Debit Wages A/c and Credit Cash A/c

(d) Debit Suspense A/c and Credit Wages A/c

Q3. Pass rectifying journal entries to correct the following errors located **after** the preparation of the Trial Balance (a Suspense Account has been opened):

(i) Goods costing ₹5,000 sold to Aman on credit were recorded in the Purchases Book. (Assume Aman's account has been correctly debited).

(ii) ₹2,400 received from Suresh was credited to his account as ₹4,200.

(iii)Furniture purchased on credit from Modern Woodworks for ₹15,000 was entered in the Purchases Book.

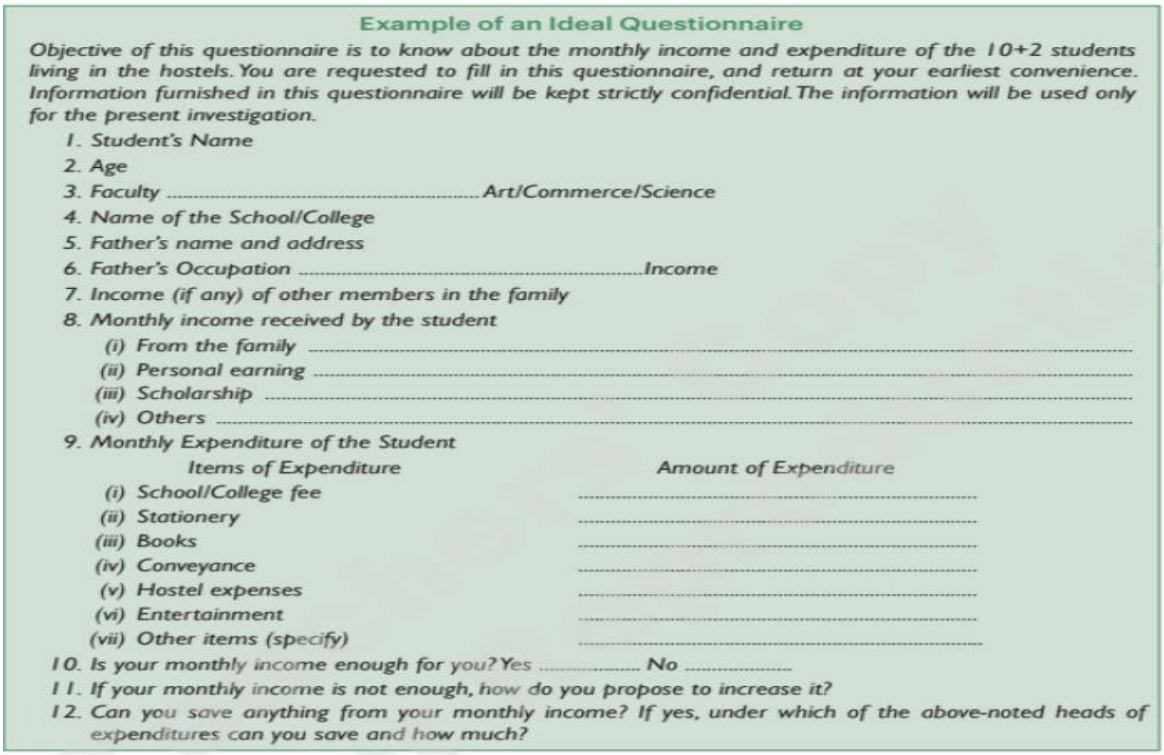
Q4. On 30th June, 2024, the Bank Passbook of **Sunil & Bros.** showed an overdraft balance of ₹36,500. On comparing it with the Cash Book, the following discrepancies were noticed:

1. Cheques paid into the bank for ₹25,000, out of which cheques worth ₹9,000 were credited in July 2024.
2. Cheques issued to creditors amounting to ₹30,000 were not presented for payment until 5th July 2024.
3. Insurance premium of ₹4,200 paid directly by the bank as per standing instructions was not recorded in the Cash Book.

Q5. From the following particulars, prepare a Bank Reconciliation Statement of **M/s Goyal Traders** as on 31st March, 2024:

1. Bank balance as per Cash Book (Debit): ₹45,000.
2. Cheques issued amounting to ₹18,000 were presented for payment only to the extent of ₹11,500 up to 31st March.
3. Cheques amounting to ₹12,000 were sent to the bank for collection, but only cheques of ₹7,000 were credited by the bank before 31st March.

ECONOMICS



Example of an Ideal Questionnaire

Objective of this questionnaire is to know about the monthly income and expenditure of the 10+2 students living in the hostels. You are requested to fill in this questionnaire, and return at your earliest convenience. Information furnished in this questionnaire will be kept strictly confidential. The information will be used only for the present investigation.

1. Student's Name
2. Age
3. Faculty ..... Art/Commerce/Science
4. Name of the School/College
5. Father's name and address
6. Father's Occupation ..... Income
7. Income (if any) of other members in the family
8. Monthly income received by the student
   - (i) From the family .....
   - (ii) Personal earning .....
   - (iii) Scholarship .....
   - (iv) Others .....
9. Monthly Expenditure of the Student

Items of Expenditure	Amount of Expenditure
(i) School/College fee	.....
(ii) Stationery	.....
(iii) Books	.....
(iv) Conveyance	.....
(v) Hostel expenses	.....
(vi) Entertainment	.....
(vii) Other items (specify)	.....

10. Is your monthly income enough for you? Yes ..... No .....
11. If your monthly income is not enough, how do you propose to increase it?
12. Can you save anything from your monthly income? If yes, under which of the above-noted heads of expenditures can you save and how much?

Q.1. Complete the above table

Q.2. Explain census and sample method

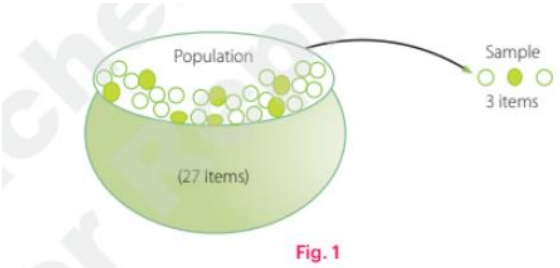
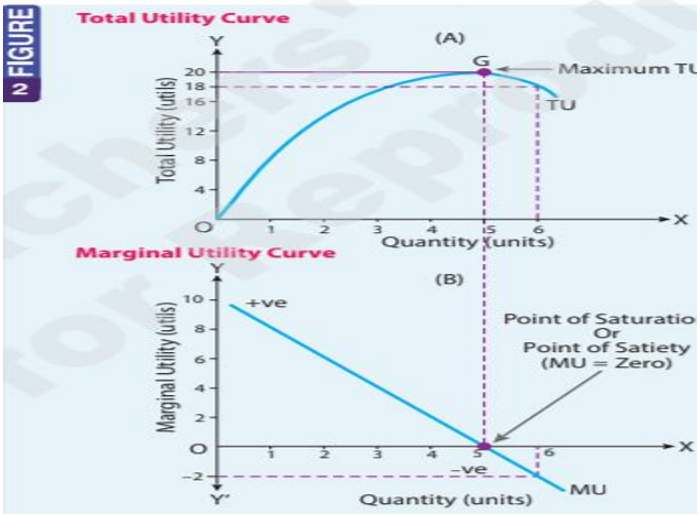


Fig. 1

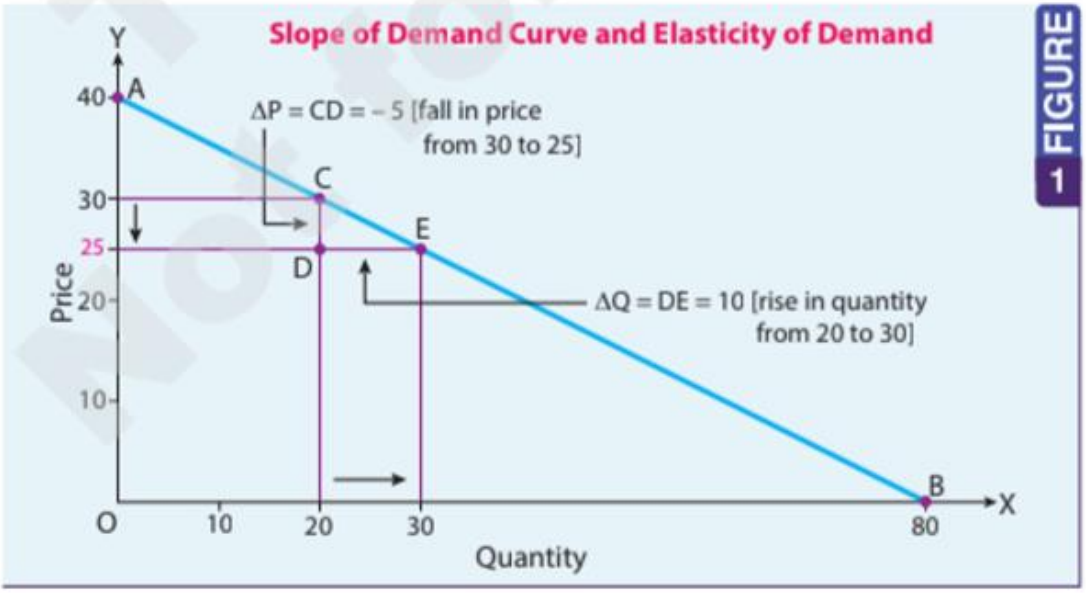


Quantity (Units)	Total Utility	
0	0	
1	8	
2	14	
3	18	
4	20	
5	20	
6	18	



Q.3. On account of above picture explain the relationship between TU and MU.

Q.4. On account of below picture, explain price elasticity of demand.



Business Studies

Prepare a **3–5 minute video or a PowerPoint presentation (PPT)** connecting Durga Puja with the concepts studied in the chapter *Business Finance*.

Instructions :

i) Sources of Finance: Explain how Puja committees arrange funds through donations, sponsorships and members' contributions. *Example: A company sponsors the pandal in exchange for displaying its brand logo.*

ii) Fixed Capital and Working Capital: Differentiate between fixed capital and working capital using suitable examples. *Example: Purchasing reusable sound equipment versus purchasing flowers, oil and other daily-use materials.*

iii) Financial Planning and Budgeting: Prepare a sample budget for a Puja celebration and explain how funds are allocated to idols, decorations, lighting, security and other expenses.

iv) Business Opportunities: Explain how Durga Puja benefits local businesses. *Example: Idol makers receive orders, while food stalls and clothing shops experience increased sales.*

v) Short-term and Long-term Finance: Explain the suitability of short-term and long-term sources of finance in relevant situations. *Example: A shopkeeper may use short-term credit to purchase additional festive stock, while a business may use a long-term loan to purchase equipment for future use.*

Use photographs, video clips, interviews, charts or financial illustrations to make your project creative and informative. Conclude by highlighting the importance of effective financial management in organising festivals and running businesses successfully.

Submit your assignments in the below given link-
https://docs.google.com/forms/d/e/1FAIpQLSeuzI338P1oca7RpH0RlxAg3-6MabqbAp0HNIF4ACBWT7Q0-w/viewform?usp=publish-editor

IP

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```
*
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* * * *
* * * * *
```

Applied Maths

Read the following text carefully and answer the questions that follow:

> **1. Ordered Pairs** The ordered pair of two elements a and b is denoted by (a, b): a is first element (or first component) and b is second element (or second component).

Two ordered pairs are equal if their corresponding elements are equal.

i.e. $(a, b) = (c, d) \Rightarrow a = c$ and $b = d$

Cartesian Product of Two Sets For two non - empty sets A and B, the cartesian product $A \times B$ is the set of all ordered pairs of elements from sets A and B.

In symbolic form, it can be written as

$A \times B = \{(a, b): a \in A, b \in B\}$

1. Let A and B be two sets such that $A \times B$ consists of 6 elements. If three elements of $A \times B$ are (1, 4), (2, 6) and (3, 6), then find $A \times B$ and $B \times A$. (1)

2. If $(x + 2, 4) = (5, 2x + y)$, then find the value of x and y. (1)

3 . If $(x + 6, y - 2) = (0, 6)$, then find the value of x and y. (1)

OR

If (a - 3, b + 7) = (3, 7), then find the value of a and b. (1)

2. Let **N** be the set of natural numbers. Define a real valued function f: $N \rightarrow N$ by f(x) = 2x+1. Using this definition, complete the table given below

x	1	2	3	4	5	6	7
y	f (1) = ...	f (2) = ...	f (3) = ...	f (4) = ...	f (5) = ...	f (6) = ...	f (7) = ...

3.Read the following text carefully and answer the questions that follow:

An organization conducted bike race under 2 different categories - boys and girls. Totally there were 250 participants. Among all of them finally, three from Category 1 and two from Category 2 were selected for the final race. Ravi forms two sets B and G with these participants for his college project.

Let B = {b_1 , b_2 , b_3 } G = {g_1 , g_2 } where B represents the set of boys selected and G the set of girls who were selected for the final race.



Ravi decides to explore these sets for various types of relations and functions.

1. Does Ravi wish to form all the relations possible from B to G. How many such relations are possible? (1)

2. Let R : B→ B be defined by R = {(x, y) : xand y are students of same sex}, Then describe relation R.(1)

3. Ravi wants to know among those relations, how many functions can be formed from B to G?(2)

OR

Ravi wants to find the number of injective functions from B to G. How many numbers of injective functions are possible? (2)

4 . A local train from Mumbai leaves every 40 minutes from the station. When inquired by a passenger, the help desk executive informed that the train had already left 10 minutes ago. If this information was given at 10:15a.m. a) At what time did the train leave the station? b) At what time will the next train leave the

station? c) For how long will that man has to wait for the next train? d) Find the angle formed between the minute hand and the hour hand when the passenger will board the next train?

5. Group of 8 persons A, B, C, D, E, F, G and H are seated around a square table while facing towards each other two persons are seated on each side. There are three ladies in a group and they are not allowed to sit next to each other. F is seated between H and B, also C is seated between E and B. D is a lady member who is seated second to the left of F. A is a lady member seated opposite to B. B is a male member. A lady member must be seated in between B and E. Answer the following questions on the basis of the above information: (i) Identify the lady members. (ii) Name the members who is seated immediate left to B (iii) Name the members who are adjacent to D

GRAPHICS

Draw & Paint five Layout in your Graphics File on the following Topics.

a) Festivals b) Sports c) Nature d) Fantasy World e) Yoga