SUMMER VACATION ASSIGNMENTS (2026-27)

CLASS -XI

BUSINESS STUDIES

General instructions:

i. The assignment is divided into two parts.

ii. Part A contains a set of questions to be attempted in the business studies class register.

iii. Part B has to be done in a project file.

PART A

1. Classify the following into economic and non-economic activities:

a) Smita cooks food for her family.

b) A person selling cold drinks on the railway station.

c) A student praying in a temple for good marks in the test.

d) A doctor treating patients at his clinic.

e) An old lady attending a 'Satsung'.

f) A person teaching his daughter for her Board Exams.

2. Give examples of various types of industries. (three each).

3. Identify the services detailed below:

(a) The service which helps in removing hindrance of knowledge.

(b) The service which helps in removing hindrance of exchange.

(c) The service which helps in removing hindrance of place.

(d) The service which helps in removing hindrance of time.

(e) The service which helps in removing hindrance of risk.

5. 'Risk in an inherent element of a business'. Do you agree? Give reasons.

6. Which type of business risk involves both the possibility of gain as well as the possibility of loss?

7. Differentiate between Business and Profession.

8. "Profit is an essential objective of business due to certain reasons". Comment.

9. Differentiate between Economic and Non-Economic Activities.

10. "Is Profit maximization the sole objective of a business." Comment

PART B

11. Select a Consumer durable public limited company of your choice and collect the following information regarding that company:

a) Brief history

b) Mission statement

c) Names of its top-level officials.

d) Details of the products manufactured and marketed

e) Brand name, brand mark and standardization mark adopted by the company.

f) Market standing

g) Types of sales promotional techniques used. (paste the advertisements given in the newspapers/magazines)

h) Labelling of its products. (paste the labels of its various products)

i) Innovations made by the company and future plans

j) Kinds of risks faced by the company

k) Comment on the social responsibility pursued by that company.

l) Customer support services provided by the company.

APPLIED MATHEMATICS

A) Do these activities and Assignments :

1) To find the number of subsets of a given set and verify that if a set has n number of elements then number of subsets is 2^n .

2) To represent set theoretic operations using Venn diagrams .

3) Prepare a chart of mathematics in daily life using different symbols and shapes.

OR

3) Showing the utility of geometrical figures in 'SHRIYANTRA ' OR ' SUNDIAL' by using different geoemterical shapes.

B) SOLVE THESE QUESTIONS IN NOTEBOOK

(SECTION A- 1 mark questions)

Q1. Write the roster form of $H = \{x/\ x \in N\ and\ 5 < x^2 < 50\}$.

Q2. Give example of two sets whose intersection is an empty set.

Q3. How many subsets a set has containing 5 elements.

Q4. Write the set $\left\{\frac{1}{2}, \frac{2}{3}, \frac{3}{4} \ldots.\right\}$ in set builder form.

Q5. Define power set.

(Section B- 2 mark questions)

Q6. Write all the subsets of the set $\{\phi, 1\}$.

Q7. Find sets A, B and C such that $A \cap B, B \cap C\ and\ A \cap C$ are non empty sets and $A \cap B \cap C = \emptyset$.

Q8. Two finite sets having m and k elements. If the total number of subsets of the first set is 56 more than the total number of subsets of second set, then find m and k.

Q9. For all sets A, B and C, is $(A \cap B) \cup C = A \cap (B \cup C)$? justify your answer.

Q10. If $U = \{1,2,3 \ldots., 10\},\ A = \{x: x\ is\ prime\}, B = \{x: x\ is\ even\ integer\}$. Then write the value of $A \cap B^C$.

(Section C – 4 mark questions)

Q11. A and B are two sets such that $n(A-B)=14+x, n(B-A)=3x \text{ and } n(A\cap B)=x$. draw a venn diagram to illustrate this information. If $n(A)=n(B), find\ (1)\ the\ value\ of\ x\ \ (2)\ n(A\cup B)$.

Q12. A survey shows that 63% people watch news channel A whereas 76% watch news channel B. if x% watch both the channels , prove that $39 \le x \le 63$.

Q13. If $P(A)=P(B), show\ that\ A=B$.

Q14. Let A and B be sets. If $A\cap X=B\cap X=\emptyset$ and $A\cup X=B\cup X$ for some set X, show that $A=B$

C) Creative Art Activities

1. 🔵 Venn Diagram Art

- Draw two overlapping circles
- Fill them creatively with colors/designs

👉 Example: Circle A = Even numbers

- Circle B = Multiples of 3
- Intersection = numbers common in both

🎨 Make it colorful using patterns or doodles

2. 🎭 Real-Life Sets (Indian Art Style)

- Create a rangoli-style design
- Use patterns to show sets
- Different colors = different sets , Overlapping parts = common elements

CHEMISTRY

1. **Research Project on ' Nanotechnology and its real life applications'.**
   Prepare an art integrated project on Nanotechnology in everyday life.

   Guidelines for students :

- Present your project on A4 size sheets.
- Include diagrams , images, infographics and latest scientific updates wherever possible.
- It should be of minimum 20 pages including acknowledgement and bibliography. The content may include introduction to nanotechnology, brief history, nanomaterials, Nobel Laureates in nanotechnology, applications in medicines, energy generation, environment etc.

- Organize the project under the following headings:
  - Cover page
  - Certificate
  - Acknowledgement
  - Index
  - Content
  - Conclusion
  - Bibliography/Reference

2. **Poster on: "Nano Wonders in daily life**"

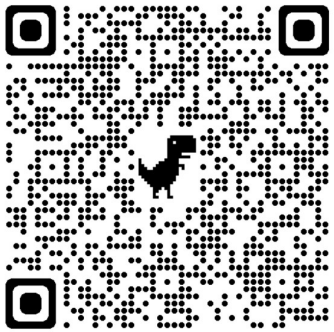
- Design a creative and informative poster promoting the role of nanotechnology in improving our daily life, environment and health.
- Your poster should include a slogan, creative artwork, and important facts related to nanotechnology and nanoscience.
- Use bright colors, neat labeling, and innovative designs to make the poster visually appealing.

INFORMATICS PRACTICES

1. Do the textbook exercises of the chapter python fundamentals in the register.
2. Theme Based :- Create a user interface a program in python to collect and store data about the

Impact of AI on Digital Media (2020-2026)

Scan to collect data



. **Using the information print and make graphical representations on AI tools used and revenue generated**

Artificial Intelligence

1. Do the textbook exercises of unit 3 python programming in the Artificial Intelligence register.
2. Theme Based :- AI Around Me – A Photo Journal

Capture real-life examples of AI applications like:-

- Face unlock on phone
- Smart assistants
- Traffic signals
- Online shopping recommendations

Output:

- e-Scrapbook or digital portfolio.
- Explain visually how AI is used in each case?

Or

Theme Based :- AI Awareness Survey Project.

Conduct a survey in your neighborhood or school.

Questions could include:

- Do you use AI knowingly?
- Which apps do you use daily?
- Do you trust AI decisions?

Output:

- Graphs (bar/pie charts)
- Conclusion report

Skill: Data analysis + interpretation

BIOLOGY

1. Select a topic for investigatory project report and make a report including the following headings:

- Theory
- Materials Required
- Procedure
- Observations/Observation Table
- Conclusion
- Result

2. Prepare an interactive book containing information about any one phylum, draw /paste colourful pictures of organisms belonging to the group with their characteristics

3. Do the given assignment in your Biology notebook:

WORKSHEET – CELL: THE BASIC UNIT OF LIFE

1.Select one which is not true for ribosome –

a. Made of two subunits b. Form polysome

c. May attach to m RNA d. Have no role in protein synthesis

2. Which of the following is not true of a eukaryotic cell?

a. It has 80S type of ribosome present in the mitochondria.

b. It has 80S type of ribosome present in the cytoplasm.

c. Membrane bound organelles are present.

d. Mitochondria contain circular DNA

3. Who proposed the fluid mosaic model of plasma membrane-

a) Camilo Golgi b) Schleiden and Schwann c) Singer and Nicolson

d) Robert Brown

5.Ribosomes are made up of –

a. Protein b. DNA and Protein c. RNA and protein d. DNA, RNA and Protein

6.Assertion-Ribosomes and DNA are found in prokaryotic as well as eukaryotic cell.

Reason- Prokaryotic cells does not contain membrane bound organelles.

7. Mention the function of following parts in prokaryotic cell-

a) polysome b) fimbriae c) plasmid

d) flagella

8. What is referred as satellite chromosomes?

9.Justify the statement," mitochondria are powerhouse of the cell."

10.Give the biochemical composition of plasma membrane. How are lipid molecules arranged in plasma membrane.

ENGLISH

- Research about Nobel Prize winners in Literature. In an A4 sheet, write an **Article** profiling the life and accomplishments of any one of the winners from 2020-2025. (Not more than 200 words).

- Prepare a book **cover page** featuring Tutankhamun, "the boy king"**.** Also describe the life and rule of King Tut in a **paragraph**.

- Make a **Poster** on any topics of Educational, Social or Environmental relevance. For e.g, Pollution and control measures, Save Water, Gender Equality, Importance of mental health, Climate Change, etc. (You may use A4 or A3 colour sheets)

Ensure that all homeworks are neat, attractive and done by yourself. Submit all your Assignments in a labelled clear file.

GEOGRAPHY

1. Make a detailed report over "DIFFERENT TYPES OF CLIMATE & CLIMATIC CHANGES". You can use visual representations, data & graphs. [USE A4 ruled sheets, 12-15 sheets]

2. Make a working model on any one topic :
   - Solar System
   - Formation of Day & night
   - Solar eclipse
   - Interior of Earth
   - Non conventional sources of energy
   - Oceanic floor

3. Make a chart on any one topic :
   - Branches of Geography
   - Solar System
   - Layers of Atmosphere
   - Interior of Earth

PHYSICS

1. Prepare one investigatory project on any one of the following topic or any other topic of your choice from your curriculum under the following points-
   - Title of the project
   - Name of student
   - Aim of project
   - Apparatus required
   - Principle/Theory
   - Labelled Diagram
   - Procedure
   - Observations/Observation table
   - Result
   - Graphs (if any)
   - Precautions
   - References/Bibliography

List of Projects

1. Surface tension and its application to the raft powered by surface tension.
2. Bernoulli's principle and its application to dynamic lift and Magnus effect.

3. Investigating the relationship between length of pendulum and its period of oscillation to verify the relation $T = 2\pi\sqrt{\frac{l}{g}}$ where l= is length of pendulum and g is acceleration due to gravity .
4. Studying the effect of different material on thermal conductivity of solids
5. Capillary rise(study of effect of nature of liquidon capillary height by taking at least five different liquids).
6. Pascal's law and its application to hydraulic lift and hydraulic brakes.
7. Projectile motion and study the relation between angle of projection and range of projectile.
8. Moment of inertia and angular velocity(time taken for 10 rotations in rolling chair with hands stretched and without stretched)
9. Talking about torque, why not to press front brake alone when you are riding a bike and how to perform stunts and their explanation with rotational mechanics
10. Analysis of amusement rides, force working on them , how seat position in a ride matters (for say in rollercoaster and Columbus).
11. Finding g by free fall(drop a ball from a known height and measure time to reach ground .use $h=1/2gt^2$ to find g) also show that g is independent of mass of ball by taking balls of at lest 3 different sizes
12. Verifying equation of continuity(vary area and find range which is similar to velocity)

2. **Solve the given assignments from 1.Units and measurements (3 Assignments)**
2. Motion in a straight line (2 Assignments)

In your assignment register.

Units and Measurements

Worksheet-1

- Applications of dimensional analysis :

  Conversion of one system of units to another

Solve the following problems

Q1. Convert 1 joule into erg.

Q2. The density of mercury is 13.6 g cm^{-3} in CGS system .Find its value in SI units.

Q3. An electric bulb has a power of 500 Watt. Express it in CGS units.

Q4. The value of G in CGS system is 6.67 X 10-8 dyne cm^2 g^{-2}.Calculate the value in SI units.

Q5. Find the value of 60 J per minute a system that has 100g, 100cm and 1 min as base units.

Q6. If the value of atmospheric pressure is 10^6 dyne cm^{-2} , find its value in SI units.

Q7. Find the value of 100 J on a system which has 20 cm, 250 g and half minutes as fundamental units of length, mass and time.

Q8. If the units of force, energy and velocity are 20 N, 200J and 5 ms^{-1} , find the units of length, mass and time.

Q9. When 1 m, 1 Kg and 1 min are taken as fundamental units, the magnitude of force is 36 units. What will be the value of this force in CGS system?

Q10. Convert 1 N to 1 dyne.

Worksheet-2

- Applications of dimensional analysis :

  Checking the dimensional consistency/correctness of equations

Solve the following problems

Q1. Check whether the following equations are dimensionally correct:

a. $1/2mv^2 = mgh$

b. $V=\sqrt{p}/\rho$ (V=velocity ,P= pressure, ρ=density)

c. $T=K\sqrt{p}r^3/s$ (t=time period, ρ=density, s=surface tension, r=radius)

d. $h=2s\cos\theta/r\rho g$(h=height, s=surface tension, r=radius, ρ=density, g= acceleration due to gravity)

Using principle of homogeneity solve the following

Q1. The Vander wall's equation for ideal gas is given by $(P+\frac{a}{v^2})(V-b) = RT$ where P is pressure, V is volume a and b are constants, R is universal gas constant and T is absolute temperature. Then find the dimensions of a and b.

Q2. Evaluate the homogeneity of the equation, when the rate flow of a liquid has a coefficient of viscosity η through a capillary tube of length 'l' and radius 'a' under pressure head 'p' given as $\frac{dV}{dt}=\frac{\pi p a^4}{8l\eta}$

Q3. In the equation: y = a sin (ωt-kx), t and x stand for time and distance respectively obtain the dimensional formula for ω and k.

Q4. Find the dimensions of $\frac{a}{b}$ in the following equations:

a) $P = \frac{a-t^2}{bx}$ (p = pressure , x = distance , t = time)

b) $F = a\sqrt{x} + bt^2$

Units and Measurements

Worksheet-3

- Applications of dimensional analysis :

  Deriving relation between physical quantities

Solve the following problems

1) The Time period (T) of a simple pendulum is observed to depend on the following factors -length of the pendulum (L), mass of the Bob (m) acceleration due to gravity (g) Find expression for T
2) The air bubble formed by explosion inside water performs oscillations with time period T which depends on pressure (p), density (ρ) and on energy due to explosion (E). Establish relation between T, p, E and ρ.
3) The period of oscillation of a simple pendulum depends on its length (l) , mass of the bob (m) and acceleration due to gravity (g) . Derive the expression for its time period using method of dimensions.
4) The centripetal force (F) acting on a particle moving uniformly in a circle depends upon its mass (m), velocity (v) and radius of circle (r). Derive the expression for centripetal force using method of dimensions.
5) Consider a planet of mass (m), revolving round the sun. The time period (T) of revolution of the planet depends upon the radius of the orbit (r), mass of the sun (M) and the gravitational constant (G). Using dimensional analysis, verify Kepler's third law of planetary motion.
6) *Assuming that the critical velocity of flow of a liquid through a narrow tube depends on the radius of the tube, density of the liquid and viscosity of the liquid, find an expression for critical velocity.*

7) *The frequency '**v**' of vibration* of stretched string depends upon:
   (i) Its length l
   (ii) Its mass per unit length m
   (iii) And tension t in the string; obtain dimensionally the expression for frequency.
8) A body of mass m is moving in a circle of radius r with angular velocity ω. Find expression for centripetal force acting on it by the method of dimensions.
9) The velocity of a freely falling body is a function of distance fallen through (h) and acceleration of due to gravity (g). Show by the method of dimensions that v= $k\sqrt{gh}$.
10) Using the method of dimensions derive an expression for the energy (E) of a body executing SHM ; assuming this energy depends upon its mass (m) frequency '**v**' and amplitude of vibration (r)

Motion in a straight line
Worksheet -5

Solve the following problems:

1. An athlete starts running along a circular track of radius 7m. Find the distance covered and his displacement after (a)¼ revolution (b) ½ revolution

2. Under what conditions is average velocity equal to instantaneous velocity?

3. A car travels from station A to station B at 30 km/h during its return trip to A, it travels at 30 km/h for first half distance and at 70 km/h for the next half distance. Find the average speed and average velocity of the car.

4. A particle moving along a straight line covers half of the distance with speed of 3m/s .The other half of the distance is covered in two equal time intervals with speed of 4.5 m/s and 7.5 m/s .What is the average speed of the particle?

5 .If a particle's position is given by $x=4- 12t + 3t^{-2}$ (where t is in seconds and x is in meters), what is its velocity at 5s?

6. The position of an object moving along x-axis is given by $x = a + bt^2$ where
a= 8.5 m, b = 2.5 m s^{-2} and t is measured in seconds. What is its velocity at t = 0s and t = 2.0 s. What is the average velocity between t = 2.0 s and t = 4.0 s?

7. For an object accelerating from rest, which quantity is calculated by taking the square root of double the product of acceleration and displacement?

8. An object, travelling at 10 m/s in a straight line, starts to accelerate and, after2 seconds, has travelled 24 metres. How much further would it have travelled in the same time with double the acceleration?

9. A body starts from rest and is accelerated uniformly. Find the ratio of the distances travelled by it in first, second and third seconds.

10. A proton moving with the speed of $1x10^7$m/s passes through a 0.02cm thick sheet of paper and emerges with speed of $2x10^6$ m/s. Assuming uniform deceleration, find retardation and time taken to pass through the paper.

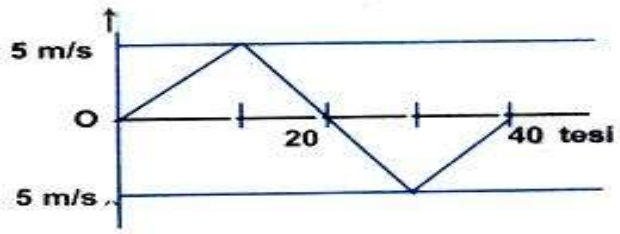
Motion in a straight line
Worksheet -6

Solve the following problems:

1. A car moving along a straight highway with speed of 126 km/h is brought to a stop within a distance of 200 m. What is the retardation of the car (assumed uniform), and how long does it take for the car to stop?

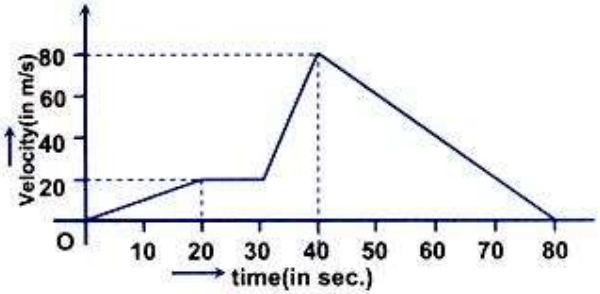
2. A player throws a ball upwards with an initial speed of 29.4 m/s
(a) What is the direction of acceleration during the upward motion of the ball ?
(b) What are the velocity and acceleration of the ball at the highest point of its motion?
(c) Choose the x = 0 m and t = 0 s to be the location and time of the ball at its highest point, vertically downward direction to be the positive direction of x-axis, and give the signs of position, velocity and acceleration of the ball during its upward, and downward motion.
(d) To what height does the ball rise and after how long does the ball return to the player's hands? (Take g = 9.8 m s^{-2} and neglect air resistance).

3. From the velocity-time plot shown in figure, find:



(a) Distance travelled by the particle during the first 40 seconds.
(b) Displacement travelled by the particle during the first 40 seconds.
(c) Also find the average velocity during the period.

4. The velocity-time graph of a moving object is given in the figure. Find the maximum acceleration of the body and distance travelled by the body in the interval of time in which this acceleration exists.



5. Displacement(y) of a particle is given by $y = 2t + t^2 - 2t^3$ .Find the velocity of the particle when acceleration is zero.

6. A particle located at x=0 at time t=0 starts moving along the positive x-direction with a velocity v that varies as v=√x Then how does the displacement of the particles varies with time?

7. A car moving with a speed of 40 km/h can be stopped by applying the brakes after at least 2 m .If the same car is moving with the speed 80K/h, what is the minimum stopping distance?

8. A stone is thrown vertically upwards with a initial speed of 10 m/s from the edge of the roof of the house of Height H=20 m
a) How long does it takes for the stone to hit the ground?
b) At what velocity it will hit the ground?

9. A body fell from rest from a height H above the ground. In the last 1 sec of the its fall, it travelled a distance H/2. Find the value of H.

PHYSICAL EDUCATION

COMPLETE THE FOLLOWING QUESTION ANSWERS IN YOUR NOTE BOOK SUBMIT IT BY 15 JULY 2026.

Q1-Define physical education and explain its aim and objectives.
Q2- Define physical fitness and wellness. Elaborate the importance of physical fitness and wellness.
Q3- Narrate the component of positive lifestyle.
Q4- What do you mean by yoga? Explain its importance in daily life.
Q-5- Discuss the elements of yoga.
Q6- What do you mean by adventure sports? Discuss the objectives of adventure sports in detail.
Q7. Discuss in detail about the structure of khelo India Program.
Q8. Explain in detail the career options in physical education.
Q9. Write short note on:
Olympic flag, Ancient Olympics, Olympic Motto, Olympic Symbols.

1. Make a chart on any one game of your choice out of the list given below. Label the diagram of field and equipment rules, terminologies& skills (basketball, football, kabaddi, kho-kho, volleyball, handball, cricket and children with special needs)
2. Prepare a file on A4 size sheets showing different type of exercise, Balanced diet, Yoga, Adventure Sports, Training methods, Importance of game and Importance of Yoga in your life etc.

POLITICAL SCIENCE

1. Make a neat and informative project file on the topic assigned in the class
   . Use A4 size colorful sheets.
   .Paste pictures ,newspaper cuttings, articles related to the topic.

2. Make one chart on A3 size sheet from the topics mentioned below :
   * Election Processes
   * Fundamental rights & duties
   * Constitution of India
   * Judiciary System of India

3. Collects information in the changes that occurred in **Fundamental Rights** during last 5 years & write a re[port in Political Science notebook over the same topic . Use data & pictures if required. Word limit : 300 words

PSYCHOLOGY

Theme: "Understanding Self and Behavior in Everyday Life"

General Instructions:

1.The assignment must be handwritten in a neat and organized manner.

2.Use practical file ruled sheets.

3.Include a cover page with your name, class, section, and topic.

4.Support your answers with examples from daily life wherever possible.

5.Be creative

ASSIGNMENT 1: Self-Reflection Journal

Write a daily reflection for any 5 days during your vacation.

Each entry should include:

1. Situation you experienced
2. Your thoughts during that situation
3. Your emotions (feelings)
4. Your reaction/behaviour
5. What you learned about yourself

(Word limit: 100–150 words per entry)

ASSIGNMENT 2: Person Study

Observe any one person (friend/family member) and write a report on the person.

Each entry should include:

1. Basic introduction (age, relation, general nature)
2. His/her habits, interests, and behaviour patterns
3. Situations where they react emotionally
4. Word limit: 300–400 words

ACCOUNTANCY

1. Students are requested to make a colorful chart highlighting one of the following topics:

a. Prepare a chart on the "Performance of India's Manufacturing Sector in Budget 2026," using newspaper clippings.

OR

b. Prepare a chart on "Union Budget 2026-27: What Gets Cheaper and What Gets Costlier," using newspaper clippings.

OR

c. Prepare a chart reporting fuel prices in India and their impact on industries. Show a comparison of the last 6 months or the last 5 years using pie charts, newspaper clippings, line graphs, etc.

2. Prepare a report on the comparative study of accounting standards (Ind - AS) and IFRS also show their impact on financial reporting in India.

3. Prepare a report on the types of accounting, including different examples and their implications across industries.

HINDI

सामान्य निर्देश:-

1. परियोजना कार्य A4 साइज शीट पर कीजिए.

2. सुंदर लेख ध्यान दीजिए

3. प्रथम पृष्ठ पर सभी विद्यार्थी अपना परिचय दीजिए.

4. परियोजना कार्य को MY CLEAR बैग में रखिए.

1.इनमें से किन्हीं दो लेखकों का जीवन परिचय देते हुए उनकी कहानियों पर परियोजना कार्य कीजिए|

1.प्रेमचंद

2. मन्नू भंडारी

3. महादेवी वर्मा

4.पंडित चंद्रधर शर्मा गुलेरी

5.जयशंकर प्रसाद