



SMART TEST SERIES

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Name:		Roll#:		Class:	Inter Part-I
Subject:	Chemistry-11	Date:		Time:	
Questions Type	Type 3 - MCQs + SQs Test - Marks=30				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (10x1=10)

- For a given process, the heat changes at constant pressure (q_p) and at constant volume (q_v) are related to each other as:
(A) $q_p = q_v$ (B) $q_p < q_v$ (C) $q_p > q_v$ (D) $\frac{q_v}{q_p} \frac{1}{2}$
- The net heat change in a chemical reaction is same whether it is brought about in two or more different ways in one or several steps. It is known as:
(A) Henry's law (B) Hess's law (C) Joule's principle (D) Law of conservation of energy
- The Pressure of oxygen inside the bomb calorimeter is:
(A) 100 atm (B) 50 atm (C) 25 atm (D) 20 atm
- For the reaction $NaOH + HCl \rightarrow NaCl + H_2O$ the change in Enthalpy is called:
(A) Heat of reaction (B) Heat of formation (C) Heat of Neutralizations (D) Heat of combustion
- Calorie is equivalent to:
(A) 0.4184 J (B) 41.84 J (C) 4.184 J (D) 418.4 J
- The optimum temperature for the synthesis of NH_3 by Haber's process is:
(A) 200 °C (B) 300 °C (C) 400 °C (D) 500 °C
- Which of the following statements is contrary to the first law of thermodynamic?
(A) An equivalent amount of heat energy can neither be created nor destroyed
(B) One form of energy can be transferred into an equivalent amount of other kinds of energy
(C) In an adiabatic process, the work done is independent of its path
(D) Continuous production of mechanical work without supplying an equivalent amount of heat is possible
- In endothermic reactions, the heat content of the:
(A) Products is more than that of reactants (B) Reactants is more than that of products
(C) Both a and b (D) Reactants and products are equal
- The change in heat energy of a chemical reaction at constant temperature and pressure is called:
(A) Enthalpy change (B) Bond energy (C) Heat of sublimation (D) internal energy change
- Enthalpy of neutralization of all the strong acids and strong bases has the same value because:
(A) Neutralization leads to the formation of salt and water
(B) Strong acids and bases are ionic substances
(C) Acids always give rise to H^+ ions and bases always furnish OH^- ions
(D) The net chemical change involves the combination of H^+ and OH^- ions to form water

Q.2 Write short answers of the following questions.

(10x2=20)

- Describe state function with an example.
- Prove that $\Delta E = q_v$.
- Define enthalpy of neutralization with one example.
- What is standard enthalpy of solution? Give one example.
- State Hess's law of constant Heat summation.
- Justify that heat of formation of compound is the sum of all the other enthalpies.
- Differentiate between Internal energy change and enthalpy change.
- Is it true that a non-spontaneous process never happens in the universe?
- How will you differentiate between ΔE and ΔH ? is it true that ΔH and ΔE have the same values for the reactions taking place in the solution state.
- What is the difference between heat and temperature? Write a mathematical relationship between these two parameters.

MCQs Ans Key.

Q:1 (C)

Q:2 (B)

Q:3 (D)

Q:4 (C)

Q:5 (C)

Q:6 (C)

Q:7 (D)

Q:8 (A)

Q:9 (A)

Q:10 (D)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Chemistry-11	Date:		Time:	
Questions Type	Type 3 - MCQs + SQs Test - Marks=30				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (10x1=10)

- The net heat change in a chemical reaction is same whether it is brought about in two or more different ways in one or several steps. It is known as:
(A) Henry's law (B) Hess's law (C) Joule's principle (D) Law of conservation of energy
- The Pressure of oxygen inside the bomb calorimeter is:
(A) 100 atm (B) 50 atm (C) 25 atm (D) 20 atm
- For the reaction $NaOH + HCl \rightarrow NaCl + H_2O$ the change in Enthalpy is called:
(A) Heat of reaction (B) Heat of formation (C) Heat of Neutralizations (D) Heat of combustion
- Calorie is equivalent to:
(A) 0.4184 J (B) 41.84 J (C) 4.184 J (D) 418.4 J
- The born-Haber cycle is the best application of law:
(A) Boyle's (B) Dalton's (C) Hess's (D) Graham's
- The optimum temperature for the synthesis of NH_3 by Haber's process is:
(A) 200 °C (B) 300 °C (C) 400 °C (D) 500 °C
- Which of the following statements is contrary to the first law of thermodynamic?
(A) An equivalent amount of heat energy can neither be created nor destroyed
(B) One form of energy can be transferred into an equivalent amount of other kinds of energy
(C) In an adiabatic process, the work done is independent of its path
(D) Continuous production of mechanical work without supplying an equivalent amount of heat is possible
- In endothermic reactions, the heat content of the:
(A) Products is more than that of reactants (B) Reactants is more than that of products
(C) Both a and b (D) Reactants and products are equal
- The change in heat energy of a chemical reaction at constant temperature and pressure is called:
(A) Enthalpy change (B) Bond energy (C) Heat of sublimation (D) internal energy change
- Enthalpy of neutralization of all the strong acids and strong bases has the same value because:
(A) Neutralization leads to the formation of salt and water
(B) Strong acids and bases are ionic substances
(C) Acids always give rise to H^+ ions and bases always furnish OH^- ions
(D) The net chemical change involves the combination of H^+ and OH^- ions to form water

Q.2 Write short answers of the following questions.

(10x2=20)

- Differentiate between system and surroundings.
- Why it is necessary to mention the physical states of reactants and products in thermo chemical reaction?
- Define system and surrounding. Show by diagram of any one example.
- State 1st law of theomodynamics. How does its explain $q_v = \Delta E$
- Explain the term enthalpy.
- Define enthalpy of neutralization and enthalpy of combustion.
- Define standard enthalpy of combustion. Give one example.
- Justify that heat of formation of compound is the sum of all the other enthalpies.
- Hess's law helps us, to calculate the heats of those reactions, which cannot be normally carried out in a laboratory. Explain it.
- Differentiate between Internal energy change and enthalpy change.

MCQs Ans Key.

Q:1 (B)

Q:2 (D)

Q:3 (C)

Q:4 (C)

Q:5 (C)

Q:6 (C)

Q:7 (D)

Q:8 (A)

Q:9 (A)

Q:10 (D)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Chemistry-11	Date:		Time:	
Questions Type	Type 6 - Short Test (No Choice) - Marks=25				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(5x1=5)

- For a given process, the heat changes at constant pressure (q_p) and at constant volume (q_v) are related to each other as:
(A) $q_p = q_v$ (B) $q_p < q_v$ (C) $q_p > q_v$ (D) $\frac{q_v}{q_p} = 2$
- The net heat change in a chemical reaction is same whether it is brought about in two or more different ways in one or several steps. It is known as:
(A) Henry's law (B) Hess's law (C) Joule's principle (D) Law of conservation of energy
- The Pressure of oxygen inside the bomb calorimeter is:
(A) 100 atm (B) 50 atm (C) 25 atm (D) 20 atm
- In endothermic reactions, the heat content of the:
(A) Products is more than that of reactants (B) Reactants is more than that of products
(C) Both a and b (D) Reactants and products are equal
- Enthalpy of neutralization of all the strong acids and strong bases has the same value because:
(A) Neutralization leads to the formation of salt and water
(B) Strong acids and bases are ionic substances
(C) Acids always give rise to H^+ ions and bases always furnish OH^- ions
(D) The net chemical change involves the combination of H^+ and OH^- ions to form water

Q.2 Write short answers of the following questions.

(6x2=12)

- Differentiate between system and surroundings.
- Why it is necessary to mention the physical states of reactants and products in thermo chemical reaction?
- Define enthalpy of neutralization and enthalpy of combustion.
- Draw a labeled diagram of bomb calorimeter.
- Define standard enthalpy of atomization with an example.
- State Hess's law of constant Heat summation.

NOTE: Attempt the following question.

(8x1=8)

- How the enthalpy of a reaction is measured by glass calorimeter?
- Calculate the heat of formation of ethyl alcohol when Heat of formation of water is $-285.8 \text{ kJ mol}^{-1}$.

MCQs Ans Key.

Q:1 (C)

Q:2 (B)

Q:3 (D)

Q:4 (A)

Q:5 (D)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Chemistry-11	Date:		Time:	
Questions Type	Type 7 - Short Test - Marks=25				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(5x1=5)

- The net heat change in a chemical reaction is same whether it is brought about in two or more different ways in one or several steps. It is known as:
(A) Henry's law (B) Hess's law (C) Joule's principle (D) Law of conservation of energy
- Calorie is equivalent to:
(A) 0.4184 J (B) 41.84 J (C) 4.184 J (D) 418.4 J
- The born-Haber cycle is the best application of law:
(A) Boyle's (B) Dalton's (C) Hess's (D) Graham's
- The optimum temperature for the synthesis of NH_3 by Haber's process is:
(A) 200 °C (B) 300 °C (C) 400 °C (D) 500 °C
- Enthalpy of neutralization of all the strong acids and strong bases has the same value because:
(A) Neutralization leads to the formation of salt and water
(B) Strong acids and bases are ionic substances
(C) Acids always give rise to H^+ ions and bases always furnish OH^- ions
(D) The net chemical change involves the combination of H^+ and OH^- ions to form water

Q.2 Write short answers to any (6) of the following questions.

(6x2=12)

- Differentiate between system and surroundings.
- What do you know about internal energy of system?
- Prove that $\Delta E = q_v$.
- Define Born-Haber cycle and Lattice energy.
- Hess's law helps us, to calculate the heats of those reactions, which cannot be normally carried out in a laboratory. Explain it.
- Differentiate between Internal energy and enthalpy
- Differentiate between Internal energy change and enthalpy change.
- How will you differentiate between ΔE and ΔH ? is it true that ΔH and ΔE have the same values for the reactions taking place in the solution state.
- What is the difference between heat and temperature? Write a mathematical relationship between these two parameters.

NOTE: Attempt any ONE (1) questions.

(8x1=8)

- 3(a) State first law of thermodynamics. How does it explain that $q_p = \Delta H$.

(b) Prove that $\Delta E = q_v$
- 4(a) Explain the term internal energy of a system and also mention how the change in internal energy of a system can occur?

(b) Calculate the heat of formation of ethyl alcohol when Heat of formation of water is $-285.8 \text{ kJ mol}^{-1}$.

MCQs Ans Key.

Q:1 (B)

Q:2 (C)

Q:3 (C)

Q:4 (C)

Q:5 (D)

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Name:		Roll#:		Class:	Inter Part-I
Subject:	Biology-11	Date:		Time:	
Questions Type	Type 1 - MCQs Test - Marks=20				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (20x1=20)

- 1 Tests of foraminifera, are made up of:
(A) Silica (B) Calcium (C) Sulphur (D) Magnesium
- 2 One or small diploid micronuclei of ciliates function in:
(A) Sexual process (B) Pellicle (C) Sheath (D) Cuticle
- 3 Actinopods with glassy shells are:
(A) Rotifers (B) Radiolarians (C) Diatoms (D) Forams
- 4 The causative agent of African sleeping sickness is:
(A) Tse-tse fly (B) Mosquito (C) Trypanosoma (D) Trichonymphas
- 5 Sleeping sickness is spread by:
(A) Tsetse fly (B) Trypanosoma (C) Mosquito (D) Plasmodium
- 6 Example of Apicomplexans is:
(A) Vorticella (B) Plasmodium (C) Sentor (D) Amoeba
- 7 Sleeping sickness is transmitted by bite of infected:
(A) Lice (B) Tick (C) Tsetse (D) Mosquito
- 8 Amoebas move and obtain food by means of:
(A) Cilia (B) Flagella (C) Plasmodium (D) Pseudopodia
- 9 The tsetse fly of African countries transmits Trypanosoma, the cause of:
(A) Sleeping sickness (B) Measles (C) Lung infection (D) Malaria
- 10 Pelomyxalustris is an example of:
(A) Bacteria (B) Ciliate (C) Algae (D) Amoeba
- 11 The sexual process is exhibited by most ciliates by:
(A) Binary fission (B) Budding (C) Conjugation (D) Fertilization
- 12 Diatoms belong to phylum:
(A) Rhodophyta (B) Phaeophyta (C) Chrysophyta (D) Pyrrophyta
- 13 The largest brown algae are called:
(A) Diatoms (B) kelps (C) Dinoflagellates (D) Gelidium
- 14 Ceratium belongs to group of algae called:
(A) Diatoms (B) red algae (C) Brown algae (D) Dinoflagellates
- 15 Length of brown algae range from few centimeters to:
(A) Amphitrichous (B) Monotrichous (C) Lophotrichous (D) Atrichous
- 16 The classification of algae into phyla is largely based on the composition of:
(A) Cell wall (B) Cell membrane (C) Cytoplasm (D) Pigments
- 17 Phycoerythrin is found in:
(A) Green algae (B) Red algae (C) Brown algae (D) Blue green algae
- 18 Algae which have shell composed of two halves that fit together like petridish are:
(A) Brown Algae (B) Diatom (C) Green Algae (D) Red Algae
- 19 The feeding stage of a slime mold is:
(A) Blastostyle (B) Sporozoites (C) Gastrozooid (D) Plasmodium
- 20 Phytophthora infestans belongs to the group:
(A) Myxomycota (B) Oomycetes (C) Euglenoids (D) Rhodophyta



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Subject:	Biology-11	Date:		Time:	
Questions Type:	Type 1 - MCQs Test - Marks=20				
Test Syllabus:	Unit-7,				

MCQs Ans Key

Q:1 (B)

Q:2 (A)

Q:3 (B)

Q:4 (C)

Q:5 (A)

Q:6 (B)

Q:7 (C)

Q:8 (D)

Q:9 (A)

Q:10 (A)

Q:11 (C)

Q:12 (C)

Q:13 (B)

Q:14 (D)

Q:15 (D)

Q:16 (D)

Q:17 (B)

Q:18 (B)

Q:19 (D)

Q:20 (A)



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Questions Type	Type 1 - MCQs Test - Marks=20				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one.
(20x1=20)

- 1 Which of the following is not present in protists?
(A) Flagella (B) Embryo (C) Cilia (D) None of These
- 2 Tests of foraminifera, are made up of:
(A) Silica (B) Calcium (C) Sulphur (D) Magnesium
- 3 Which one of the following is not a ciliate:
(A) Stentor (B) Trypanosoma (C) Paramecium (D) vortecella
- 4 An outer flexible covering of ciliates is:
(A) Cell wall (B) Pellicle (C) Sheath (D) Cuticle
- 5 The protozoans having two kinds of nuclei:
(A) Amoeba (B) Zooflagellates (C) Ciliates (D) Actinopods
- 6 The causative agent of African sleeping sickness is:
(A) Tse-tse fly (B) Mosquito (C) Trypanosoma (D) Trichonymphas
- 7 Apicomplexans move by:
(A) Tube feet (B) Cilia (C) Flexing (D) Pseudopodia
- 8 What is not true for ciliates?
(A) Flexible outer covering, the pellicle (B) Without nuclei (C) Maybe sessile
(D) Do not ingest bacteria
- 9 African sleeping sickness is transmitted by:
(A) Trypanosoma (B) Mosquito (C) Tsetse fly (D) Plasmodium
- 10 Sleeping sickness is transmitted by bite of infected:
(A) Lice (B) Tick (C) Tsetse (D) Mosquito
- 11 Pelomyxapalustris is an example of:
(A) Bacteria (B) Ciliate (C) Algae (D) Amoeba
- 12 Pelomyxapalustris is commonly called:
(A) Entamoeba (B) Trypanosoma (C) Trichonympha (D) Giant amoeba
- 13 Pelomyxapalustris is:
(A) Bacterium (B) Amoeba (C) Zooflagellate (D) Ciliate
- 14 The sexual process is exhibited by most ciliates by:
(A) Binary fission (B) Budding (C) Conjugation (D) Fertilization
- 15 Algae having shells composed of two halves that fit together like petridish belongs to:
(A) Diatoms (B) Foraminifera (C) Actinopoda (D) Slime molds
- 16 Members of phylum chrysophyta are commonly called:
(A) Brown Algae (B) Red Algae (C) Dinoflagellates (D) Diatoms
- 17 Algae whose cell wall consist of two shells that overlap like petri dish:
(A) Dinoflagellates (B) Diatoms (C) Ciliates (D) Euglenoids
- 18 Ceratium belongs to group of algae called:
(A) Diatoms (B) red algae (C) Brown algae (D) Dinoflagellates
- 19 Algae which take part in building coral reefs along with coral animals are:
(A) Red Algae (B) Brown Algae (C) Green Algae (D) Diatoms
- 20 Phytophthora infestans belongs to the group:
(A) Myxomycota (B) Oomycetes (C) Euglenoids (D) Rhodophyta



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Questions Type:	Type 1 - MCQs Test - Marks=20				
Test Syllabus:	Unit-7,				

MCQs Ans Key

Q:1 (B)	Q:2 (B)	Q:3 (B)	Q:4 (B)	Q:5 (C)	Q:6 (C)
Q:7 (C)	Q:8 (B)	Q:9 (A)	Q:10 (C)	Q:11 (A)	Q:12 (D)
Q:13 (B)	Q:14 (C)	Q:15 (A)	Q:16 (D)	Q:17 (B)	Q:18 (D)
Q:19 (A)	Q:20 (A)				



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Biology-11	Date:		Time:	
Questions Type	Type 4 - SQs + LQs Test - Marks=40				
Test Syllabus:	Unit-7,				

Q.1 Write short answers of the following questions.

(6x2=12)

- (i) Name six group of animal like protists.
- (ii) Compare forms and locomotion of zooflagellates and ciliates.
- (iii) Write down two characteristics of apicomplexans.
- (iv) Differentiate between zooflagellates and dinoflagellates.
- (v) Write symptoms of Malaria and their cause.
- (vi) Write any two characteristics of diatoms.

Q.2 Write short answers of the following questions.

(6x2=12)

- (i) Write features of chrysophyta.
- (ii) How Algae differ from plants?
- (iii) Give habitat of Algae.
- (iv) What is feeding stage of slime mold? Define it.
- (v) What was the reason for migration out of Ireland?
- (vi) Why slime molds are included in kingdom protocista?

Write long answers of the following questions.

(2x8=16)

3. Describe structure and reproduction of slime molds.
 - (a)
- (b) Green algae are considered ancestral organisms of green land plants. Discuss.
4. How are protists important to humans? What is their ecological importance?
 - (a)
- (b) What are the reasons for grouping simple eukaryotic organisms into a separate kingdom, protista?



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Biology-11	Date:		Time:	
Questions Type	Type 8 - Short Test (No Choice) - Marks=30				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(6x1=6)

- 1 An outer flexible covering of ciliates is:
(A) Cell wall (B) Pellicle (C) Sheath (D) Cuticle
- 2 Sleeping sickness is transmitted by bite of infected:
(A) Lice (B) Tick (C) Tsetse (D) Mosquito
- 3 The sexual process is exhibited by most ciliates by:
(A) Binary fission (B) Budding (C) Conjugation (D) Fertilization
- 4 Algae which take part in building coral reefs along with coral animals are:
(A) Red Algae (B) Brown Algae (C) Green Algae (D) Diatoms
- 5 Length of brown algae range from few centimeters to:
(A) Amphitrichous (B) Monotrichous (C) Lophotrichous (D) Atrichous
- 6 The feeding stage of a slime mold is called:
(A) Thallus (B) Hyphae (C) Mycelium (D) Plasmodium

Q.2 Write short answers of the following questions.

(8x2=16)

- (i) Write down two characteristics of ciliates.
- (ii) How Algae differ from plants?
- (iii) Write a note on Euglenoids.
- (iv) Explain red tides.
- (v) Brown Algae includes the giants of the protists kingdom, why?
- (vi) Give habitat of Algae.
- (vii) Give two examples each of Red algae and Green algae.
- (viii) Write down similarities and differences between fungi and fungus like protista.

NOTE: Attempt the long question.

(4+4=8)

- 3(a) What are three major groups of protists?
- (b) What are the reasons for grouping simple eukaryotic organisms into a separate kingdom, protista?

MCQs Ans Key.

Q:1 (B)

Q:2 (C)

Q:3 (C)

Q:4 (A)

Q:5 (D)

Q:6 (D)



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Questions Type	Type 8 - Short Test (No Choice) - Marks=30				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(6x1=6)

- 1 Which one belongs to Actinopodes:
(A) Trypanosoma (B) Plasmodium (C) Verticella (D) Radiolarians
- 2 Common name for pyrophyta is:
(A) Euglenoids (B) Diatoms (C) Dinoflagellates (D) Kelps
- 3 Pelomyxapalustris is:
(A) Bacterium (B) Amoeba (C) Zooflagellate (D) Ciliate
- 4 The sexual process is exhibited by most ciliates by:
(A) Binary fission (B) Budding (C) Conjugation (D) Fertilization
- 5 Algae having shells composed of two halves that fit together like petridish belongs to:
(A) Diatoms (B) Foraminifera (C) Actinopoda (D) Slime molds
- 6 Slime mold feeding stage is:
(A) Mycelium (B) Pseudopodium (C) Plasmodium (D) Hyphae

Q.2 Write short answers of the following questions.

(8x2=16)

- (i) Compare forms and locomotion of zooflagellates and ciliates.
- (ii) Differentiate between micronucleus and macronucleus in ciliates.
- (iii) What is the role of contractile vacuole in fresh water ciliates?
- (iv) How are foraminiferans source of lime stone?
- (v) Write features of chrysophyta.
- (vi) Brown Algae includes the giants of the protists kingdom, why?
- (vii) What is chlorella?
- (viii) Give four general characters of algae.

NOTE: Attempt the long question.

(4+4=8)

- 3(a) Discuss general characteristics of algae.
- (b) Describe structure and reproduction of slime molds.

MCQs Ans Key.

Q:1 (D)

Q:2 (C)

Q:3 (B)

Q:4 (C)

Q:5 (A)

Q:6 (C)

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Questions Type	Type 7 - Short Test - Marks=25				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(5x1=5)

- 1 One or small diploid micronuclei of ciliates function in:
(A) Sexual process (B) Pellicle (C) Sheath (D) Cuticle
- 2 An outer flexible covering of ciliates is:
(A) Cell wall (B) Pellicle (C) Sheath (D) Cuticle
- 3 Sleeping sickness is transmitted by bite of infected:
(A) Lice (B) Tick (C) Tsetse (D) Mosquito
- 4 Tests of actinopods are made up of:
(A) Calcium (B) Silica (C) Sodium (D) Potassium
- 5 The edible algae is:
(A) Mushroom (B) Kelps (C) Diatoms (D) Dinoflagellates

Q.2 Write short answers to any (6) of the following questions.

(6x2=12)

- (i) How ciliates differ from other protozoans?
- (ii) Differentiate between micronucleus and macronucleus in ciliates.
- (iii) Differentiate between zooflagellates and dinoflagellates.
- (iv) Write symptoms of Malaria and their cause.
- (v) Define term thallus.
- (vi) Explain red tides.
- (vii) Give two examples each of Red algae and Green algae.
- (viii) Write down similarities and differences between fungi and fungus like protista.
- (ix) Why Physarum Polycephalum is a model organism for research?

NOTE: Attempt any ONE (1) questions.

(8x1=8)

- 3(a) Discuss important features of protists. Why are protists so difficult to classify?
- (b) Green algae are considered ancestral organisms of green land plants. Discuss.
- 4(a) What features distinguish Oomycetes from fungi?
- (b) How are protists important to humans? What is their ecological importance?

MCQs Ans Key.

Q:1 (A)

Q:2 (B)

Q:3 (C)

Q:4 (B)

Q:5 (A)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Physics-11	Date:		Time:	
Questions Type	Type 1 - MCQs Test - Marks=20				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (20x1=20)

- The acceleration of a projection on the diameter of a particle moving along a circle is:
(A) $\omega^2 x$ (B) ωx^2 (C) $-\omega^2 x$ (D) $-\omega x^2$
- The waveform of SHM is:
(A) Sine wave (B) Cosine wave (C) Tangent wave (D) Square wave
- The dimension of Spring Constant "k" are:
(A) $[MT^{-2}]$ (B) $[M^{-2}T]$ (C) $[M^2T^{-2}]$ (D) $[MLT^{-2}]$
- When one-fourth of the cycle of a vibrating body is completed then the phase change in it is:
(A) $\frac{\pi}{4}$ radian (B) $\frac{\pi}{2}$ radian (C) $\frac{3\pi}{2}$ radian (D) π radian
- The ratio of angular frequency and linear frequency is:
(A) 2π (B) π (C) $\frac{1}{2\pi}$ (D) $\frac{\pi}{2}$
- The time period of mass attached to the end of spring is:
(A) $2\pi\sqrt{\frac{k}{m}}$ (B) $2\pi\sqrt{\frac{m}{k}}$ (C) $\frac{1}{2\pi}\sqrt{\frac{m}{k}}$ (D) $\frac{1}{2\pi}\sqrt{\frac{k}{m^2}}$
- The maximum velocity v_o of the mass attached to the end of an elastic spring:
(A) $v_o = x_o\sqrt{\frac{m}{k}}$ (B) $v_o = x\sqrt{\frac{k}{m}}$ (C) $v_o = x\sqrt{\frac{m}{k}}$ (D) $v_o = x_o\sqrt{\frac{k}{m}}$
- A spring has a spring constant k. If it is cut in two equal parts, the spring constant of each part will be:
(A) k (B) 2k (C) $\frac{k}{2}$ (D) 4k
- Potential energy of oscillating mass spring system at any instant is:
(A) mgh (B) Kx^2 (C) $\frac{1}{2}Kx_o^2$ (D) $\frac{1}{2}Kx^2$
- The force responsible for the vibratory motion of simple pendulum is:
(A) $mg\cos\theta$ (B) $mg\sin\theta$ (C) $mg\sec\theta$ (D) $mg\tan\theta$
- If length of second pendulum becomes four times, then its time period will become:
(A) Four times (B) Six times (C) Eight times (D) two times
- The simple pendulum is shifted from Lahore to mount Everest, then its time period:
(A) Dose not change (B) Decreases (C) Increases (D) Slightly decreases
- A force responsible for the vibratory motion of the simple pendulum is:
(A) $mg\cos\theta$ (B) $mg\sin\theta$ (C) $mg\tan\theta$ (D) mg
- The frequency of the second pendulum is:
(A) 1 hertz (B) 0.5 hertz (C) 1.5 hertz (D) 2 hertz
- The length of simple pendulum of time period 1 second is:
(A) 2m (B) 1m (C) 0.5 (D) 0.25m
- If the length of simple pendulum is doubled then its time period becomes:
(A) Half (B) 2 times (C) $\sqrt{2}$ times (D) 4 times
- The maximum K.E of the mass attached to an elastic spring given by:
(A) $K.E_{max} = \frac{Kx_o}{2}$ (B) $K.E_{max} = \frac{Kx_o^2}{2}$ (C) $K.E_{max} = \frac{Kx}{2}$ (D) $K.E_{max} = \frac{Kx^2}{2}$
- The total energy of mass-spring system is independent of:
(A) Mass of the body (B) Amplitude (C) Spring constant (D) Nature of material of spring
- The frequency of waves produced in microwave oven is:
(A) 1435 Hz (B) 2450 MHz (C) 1860 MHz (D) 2850 Hz
- Tuning of radio is example of:
(A) Mechanical resonance (B) Electrical resonance (C) Physical resonance (D) Biological resonance

MCQs Ans Key.

Q:1 (C)

Q:2 (A)

Q:3 (A)

Q:4 (B)

Q:5 (A)

Q:6 (B)

Q:7 (D)

Q:8 (B)

Q:9 (D)

Q:10 (B)

Q:11 (D)

Q:12 (C)

Q:13 (B)

Q:14 (B)

Q:15 (D)

Q:16 (C)

Q:17 (B)

Q:18 (A)

Q:19 (B)

Q:20 (B)

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Name:		Roll#:		Class:	Inter Part-I
Subject:	Physics-11	Date:		Time:	
Questions Type	Type 1 - MCQs Test - Marks=20				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (20x1=20)

- The potential energy of a mass spring system at its mean position is:
(A) Maximum (B) Minimum (C) Equal to K.E. (D) Zero
- Phase difference between two points of a wave front is:
(A) Zero (B) $\frac{\pi}{2}$ (C) π (D) $\frac{3\pi}{2}$
- If the initial phase is $\frac{\pi}{2}$ then displacement of SHM is:
(A) $x = x_0^2 \sin \omega t$ (B) $x = \sin \omega t$ (C) $x = x_0 \cos \omega t$ (D) Zero
- The maximum velocity v_o of the mass attached to the end of an elastic spring:
(A) $v_o = x_0 \sqrt{\frac{m}{k}}$ (B) $v_o = x \sqrt{\frac{k}{m}}$ (C) $v_o = x \sqrt{\frac{m}{k}}$ (D) $v_o = x_0 \sqrt{\frac{k}{m}}$
- If mass attached to a spring increases, then the time period:
(A) Remain constant (B) Decreases (C) Increases (D) Decreases slightly
- Which of the following quantity can be expressed in kg s^{-2} :
(A) Spring constant (B) Density (C) Momentum (D) Force
- The expression for frequency of a mass 'm' attached to a spring of spring constant k is:
(A) $2\pi \sqrt{\frac{k}{m}}$ (B) $2\pi \sqrt{\frac{m}{k}}$ (C) $\frac{1}{2\pi} \sqrt{\frac{k}{m}}$ (D) $\frac{1}{2\pi} \sqrt{\frac{m}{k}}$
- The time period of an oscillating mass spring system is 10 second. If mass attached to spring is doubled then time period becomes:
(A) 10 sec (B) 20 sec (C) 5sec (D) $10\sqrt{2}$ sec
- If the tension of a stretched string is made four times then the velocity of wave.
(A) Remains same (B) Is halved (C) Becomes twice (D) Becomes 4 times
- Time period of simple pendulum only depends on:
(A) Mass (B) Amplitude (C) Density (D) Length
- The length of second pendulum is:
(A) 100 cm (B) 99 cm (C) 99.2 cm (D) 98 cm
- A force responsible for the vibratory motion of the simple pendulum is:
(A) $mg \cos \theta$ (B) $mg \sin \theta$ (C) $mg \tan \theta$ (D) mg
- While deriving the equation of time period for simple pendulum which should be kept small:
(A) Length of pendulum (B) Amplitude (C) Mass of a pendulum (D) Acceleration
- The length of simple pendulum of time period 1 second is:
(A) 2m (B) 1m (C) 0.5 (D) 0.25m
- If amplitude of a simple pendulum is increased by 4 times, the time period will be:
(A) Four times (B) Half (C) Same (D) Two times
- At which place the motion of a simple pendulum will be slowest:
(A) Karachi (B) K-2 (C) Murree (D) Lahore
- A spring of spring constant $\frac{10N}{m}$ after loading the amplitude is 2m. Then the maximum P.E is:
(A) 10 J (B) 20 J (C) 30 J (D) 40 J
- Total energy of mass spring system at displacement $x = \frac{x_0}{2}$ will be:
(A) $\frac{1}{2} k x_0^2$ (B) $\frac{1}{2} k (x_0^2 - x^2)$ (C) $k x_0^2$ (D) $\frac{1}{2} k x_0^2$
- The frequency of waves produced in microwave oven is:
(A) 1435 Hz (B) 2450 MHz (C) 1860 MHz (D) 2850 Hz
- The Wave produced in microwave oven have a wavelength of:
(A) 12cm (B) 12m (C) 18m (D) 18cm

MCQs Ans Key.

Q:1 (A)

Q:2 (B)

Q:3 (C)

Q:4 (D)

Q:5 (C)

Q:6 (A)

Q:7 (C)

Q:8 (D)

Q:9 (C)

Q:10 (D)

Q:11 (C)

Q:12 (B)

Q:13 (B)

Q:14 (D)

Q:15 (C)

Q:16 (B)

Q:17 (B)

Q:18 (A)

Q:19 (B)

Q:20 (A)



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Subject:	Physics-11	Date:		Time:	
Questions Type	Type 3 - MCQs + SQs Test - Marks=30				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (10x1=10)

- Phase angle of 180° is equivalent to a path difference of:
(A) $\lambda/2$ (B) $\lambda/4$ (C) 2λ (D) λ
- A spring has a spring constant k. If it is cut in two equal parts, the spring constant of each part will be:
(A) k (B) 2k (C) $\frac{k}{2}$ (D) 4k
- The time period of second pendulum is:
(A) 4 seconds (B) 3 seconds (C) 1 second (D) 2 seconds
- if length of the pendulum is constant and its mass of the bob is doubled, its time period.
(A) Doubled (B) Half (C) Four times (D) Remains same
- When the bob of simple pendulum is at extreme position, it has
(A) K.E (B) P.E (C) K.E and P.E (D) M.E
- In an isolated system, the total energy of the vibrating mass and spring is:
(A) Variable (B) Low (C) High (D) Constant
- Total energy of a particle executing S.H.M is:
(A) $\frac{1}{2}kx^2$ (B) $\frac{1}{2}k(x_o^2 - x^2)$ (C) $\frac{1}{2}kx_o^2$ (D) $\frac{1}{2}k(x^2 - x_o^2)$
- The total energy of mass-spring system is independent of:
(A) Mass of the body (B) Amplitude (C) Spring constant (D) Nature of material of spring
- In microwave ovens, heating is produced by phenomenon of:
(A) Damped oscillation (B) Resonance (C) Forced oscillation (D) Free oscillation
- The frequency of waves produced in microwave oven is:
(A) 1435 Hz (B) 2450 MHz (C) 1860 MHz (D) 2850 Hz

Q.2 Write short answers of the following questions.

(10x2=20)

- Show that in simple harmonic motion, the acceleration is zero when the velocity is greatest and the velocity is zero when the acceleration is greatest.
- What happens to the period of the simple pendulum if the length is halved and mass of bob is doubled?
- What happens to the period of a simple pendulum if its length is doubled?
- In relation to SHM explain the equation: $y = A\sin(\omega t + \phi)$
- If mass of a spring-mass vibrating system is increased by four times. What is the effect on its frequency?
- A mass-spring system is vibrating with amplitude 10 cm. Find its K.E. and P.E at equilibrium position, when spring constant is 20 Nm^{-1} .
- Can we realize an ideal simple pendulum?
- State the total energy of the vibrating mass and spring is constant.
- How the resonance is applicable in microwave oven?
- Describe two common phenomena in which resonance plays an important role.

MCQs Ans Key.

Q:1 (A)

Q:2 (B)

Q:3 (D)

Q:4 (D)

Q:5 (B)

Q:6 (D)

Q:7 (C)

Q:8 (A)

Q:9 (B)

Q:10 (B)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Physics-11	Date:		Time:	
Questions Type	Type 9 - Short Test (No Choice) - Marks=30				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(6x1=6)

- Potential energy of oscillating mass spring system at any instant is:
(A) mgh (B) Kx^2 (C) $\frac{1}{2}Kx_o^2$ (D) $\frac{1}{2}Kx^2$
- A simple pendulum is completing 20 vibration in 5 seconds, its frequency is:
(A) 4 Hz (B) 20 Hz (C) 200 Hz (D) 40 Hz
- The maximum K.E of the mass attached to an elastic spring given by:
(A) $K.E_{max} = \frac{Kx_o}{2}$ (B) $K.E_{max} = \frac{Kx_o^2}{2}$ (C) $K.E_{max} = \frac{Kx}{2}$ (D) $K.E_{max} = \frac{Kx^2}{2}$
- In mass spring system, $x = \frac{1}{2}kx_o$ represents:
(A) Total energy (B) K.E (C) P.E (D) Velocity
- The Wave produced in microwave oven have a wavelength of:
(A) 12cm (B) 12m (C) 18m (D) 18cm

Q.2 Write short answers of the following questions.

(8x2=16)

- A mass-spring system is vibrating with amplitude 10 cm. Find its K.E. and P.E at equilibrium position, when spring constant is 20 Nm^{-1} .
- Calculate the length of the simple pendulum which completes one vibration in one second.
- What should be the natural period of Simple Pendulum whose length is 90 cm?
- State the total energy of the vibrating mass and spring is constant.
- Explain relation between total energy, potential energy and kinetic energy for a body oscillating with SHM.
- Define resonance with one example.
- Write one advantage and one disadvantage of resonance.
- Define simple harmonic oscillator and driven harmonic oscillator?

NOTE: Attempt the long question.

(5+3=8)

- What is simple pendulum? Show that simple pendulum executes SHM. Find out its time period.
- What should be the length of a simple pendulum whose period is 1.0 second at a place where $g = 9.8 \text{ ms}^{-2}$? What is the frequency of such a pendulum?

MCQs Ans Key.

Q:1 (D)

Q:2 (A)

Q:3 (B)

Q:4 (A)

Q:5 (A)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Physics-11	Date:		Time:	
Questions Type	Type 9 - Short Test (No Choice) - Marks=30				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(6x1=6)

- The dimension of Spring Constant "k" are:
(A) $[MT^{-2}]$ (B) $[M^{-2}T]$ (C) $[M^2T^{-2}]$ (D) $[MLT^{-2}]$
- If the initial phase is $\frac{\pi}{2}$ then displacement of SHM is:
(A) $x = x_0^2 \sin \omega t$ (B) $x = \sin \omega t$ (C) $x = x_0 \cos \omega t$ (D) Zero
- The maximum velocity v_0 of the mass attached to the end of an elastic spring:
(A) $v_0 = x_0 \sqrt{\frac{m}{k}}$ (B) $v_0 = x \sqrt{\frac{k}{m}}$ (C) $v_0 = x \sqrt{\frac{m}{k}}$ (D) $v_0 = x_0 \sqrt{\frac{k}{m}}$
- The velocity of spring-mass vibrating system at mean position is:
(A) Zero (B) $\sqrt{\frac{k}{m}}$ (C) $x_0 \sqrt{\frac{k}{m}}$ (D) $\omega \sqrt{\frac{k}{m}}$
- A force responsible for the vibratory motion of the simple pendulum is:
(A) $mg \cos \theta$ (B) $mg \sin \theta$ (C) $mg \tan \theta$ (D) mg

Q.2 Write short answers of the following questions.

(8x2=16)

- Show that in simple harmonic motion, the acceleration is zero when the velocity is greatest and the velocity is zero when the acceleration is greatest.
- What happens to the period of a simple pendulum if its length is doubled?
- On what factors does the velocity of mass-spring system depends?
- Why the amplitude of the lead ball is greater than of pitch ball of same size and length? Explain.
- What will be the potential energy of mass attached to a spring at amplitude of 5 cm, if its spring constant is 10 Nm^{-1} ?
- What is difference between free and forced oscillations?
- What is driven harmonic oscillator?
- What is the value of frequency and wave length of waves produced in microwave oven, how it works.

NOTE: Attempt the long question.

(5+3=8)

- What is simple pendulum? Show that simple pendulum executes SHM. Find out its time period.
- A load of 15.0 g elongates a spring by 2.00 cm. If body of mass 294 g is attached to the spring and is set into vibration with an amplitude of 10.0 cm, what will be its (i) period (ii) spring constant (iii) maximum speed of its vibration.

MCQs Ans Key.

Q:1 (A)

Q:2 (C)

Q:3 (D)

Q:4 (C)

Q:5 (B)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Physics-11	Date:		Time:	
Questions Type	Type 16 - Full Test - Board Paper Pattern - Marks=85				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (17x1=17)

- Maximum velocity in SHM is:
(A) $x_o \omega^2$ (B) $x_o \omega$ (C) $x \omega$ (D) $x_o^2 \omega^2$
- Phase difference between two points of a wave front is:
(A) Zero (B) $\frac{\pi}{2}$ (C) π (D) $\frac{3\pi}{2}$
- The maximum velocity v_o of the mass attached to the end of an elastic spring:
(A) $v_o = x_o \sqrt{\frac{m}{k}}$ (B) $v_o = x \sqrt{\frac{k}{m}}$ (C) $v_o = x \sqrt{\frac{m}{k}}$ (D) $v_o = x_o \sqrt{\frac{k}{m}}$
- Which of the following quantity can be expressed in kg s^{-2} :
(A) Spring constant (B) Density (C) Momentum (D) Force
- A spring has a spring constant k. If it is cut in two equal parts, the spring constant of each part will be:
(A) k (B) 2k (C) $\frac{k}{2}$ (D) 4k
- Potential energy of oscillating mass spring system at any instant is:
(A) mgh (B) Kx^2 (C) $\frac{1}{2}Kx_o^2$ (D) $\frac{1}{2}Kx^2$
- The time period of second pendulum is:
(A) 4 seconds (B) 3 seconds (C) 1 second (D) 2 seconds
- While deriving the equation of time period for simple pendulum which should be kept small:
(A) Length of pendulum (B) Amplitude (C) Mass of a pendulum (D) Acceleration
- The frequency of simple pendulum is given by:
(A) $\frac{1}{2\pi} \sqrt{\frac{g}{\ell}}$ (B) $2\pi \sqrt{\frac{g}{\ell}}$ (C) $\frac{1}{2\pi} \sqrt{\frac{\ell}{g}}$ (D) $2\pi \sqrt{\frac{\ell}{g}}$
- At which place the motion of a simple pendulum will be slowest:
(A) Karachi (B) K-2 (C) Murree (D) Lahore
- In order to double period of a simple pendulum the length of the pendulum should be increased by:
(A) Four times (B) Three times (C) Two times (D) Eight times
- When the bob of simple pendulum is at extreme position, it has
(A) K.E (B) P.E (C) K.E and P.E (D) M.E
- In an isolated system, the total energy of the vibrating mass and spring is:
(A) Variable (B) Low (C) High (D) Constant
- Total energy of mass spring system at displacement $x = \frac{x_o}{2}$ will be:
(A) $\frac{1}{2}kx_o^2$ (B) $\frac{1}{2}k(x_o^2 - x^2)$ (C) kx_o^2 (D) $\frac{1}{2}kx^2$
- The total energy of mass-spring system is independent of:
(A) Mass of the body (B) Amplitude (C) Spring constant (D) Nature of material of spring
- In microwave ovens, heating is produced by phenomenon of:
(A) Damped oscillation (B) Resonance (C) Forced oscillation (D) Free oscillation
- The Wave produced in microwave oven have a wavelength of:
(A) 12cm (B) 12m (C) 18m (D) 18cm



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Physics-11	Date:		Time:	
Questions Type:	Type 16 - Full Test - Board Paper Pattern - Marks=85				
Test Syllabus:	Unit-7,				

ESSAY TYPE

(SECTION-I)

MAXIMUM MARKS-44

Q.2 Write short answers to any EIGHT (8) of the following questions.

(8x2=16)

- (i) Show that in simple harmonic motion, the acceleration is zero when the velocity is greatest and the velocity is zero when the acceleration is greatest.
- (ii) What is meant by phase angle and initial phase?
- (iii) What is meant by phase angle? Does it define angle between maximum displacement and the driving force?
- (iv) If mass of a spring-mass vibrating system is increased by four times. What is the effect on its frequency?
- (v) A mass-spring system is vibrating with amplitude 10 cm. Find its K.E. and P.E at equilibrium position, when spring constant is 20 Nm^{-1} .
- (vi) Calculate the length of the simple pendulum which completes one vibration in one second.
- (vii) Why the amplitude of the lead ball is greater than of pitch ball of same size and length? Explain.
- (viii) Can we realize an ideal simple pendulum?
- (ix) State the total energy of the vibrating mass and spring is constant.
- (x) What is difference between free and forced oscillations?
- (xi) What is driven harmonic oscillator?
- (xii) How a particular station is tuned in radio?

Q.3 Write short answers to any EIGHT (8) of the following questions.

(8x2=16)

- (i) What happens to the period of the simple pendulum if the length is halved and mass of bob is doubled?
- (ii) Does frequency depends on amplitude for harmonic oscillator?
- (iii) On what factors does the velocity of mass-spring system depends?
- (iv) What will be the potential energy of mass attached to a spring at amplitude of 5 cm, if its spring constant is 10 Nm^{-1} ?
- (v) Explain relation between total energy, potential energy and kinetic energy for a body oscillating with SHM.
- (vi) Explain example of electrical resonance.
- (vii) How the resonance is applicable in microwave oven?
- (viii) What is the value of frequency and wave length of waves produced in microwave oven, how it works.
- (ix) Define resonance with one example.
- (x) Write one advantage and one disadvantage of resonance.
- (xi) Why waves of 2450 MHz frequency are necessary for heating and cooking of food in microwave oven?
- (xii) Describe the condition under which a vibrating body resonates with other body.

Q.4 Write short answers to any Six (6) of the following questions.

(6x2=12)

- (i) What happens to the period of a simple pendulum if its length is doubled?
- (ii) In relation to SHM explain the equation: $y = A \sin(\omega t + \phi)$
- (iii) In an oscillating mass spring system if mass is doubled, how its time period will change?
- (iv) Prove that $\omega = \sqrt{\frac{k}{m}}$ for mass spring system?
- (v) What should be the natural period of Simple Pendulum whose length is 90 cm?
- (vi) What is driven harmonic oscillator? Give example.
- (vii) Describe the role of resonance in tuning a radio set to hear desired station.
- (viii) Define simple harmonic oscillator and driven harmonic oscillator?
- (ix) Describe two common phenomena in which resonance plays an important role.

ESSAY TYPE

(SECTION-II)

MAXIMUM MARKS-24

NOTE: Attempt any THREE (3) questions.

(8x3=24)

5. Define simple pendulum. Also calculate its time period.
- (a)
- (b) A load of 15.0 g elongates a spring by 2.00 cm. If body of mass 294 g is attached to the spring and is set into vibration with an amplitude of 10.0 cm, what will be its (i) period (ii) spring constant (iii) maximum speed of its vibration.
6. Define simple harmonic motion. Prove that projection of particle moving in a circle along vertical diameter is a SHM.
- (a)
- (b) A car of mass 1300 kg is constructed using a frame supported by four springs. Each spring has a spring constant $20,000 \text{ Nm}^{-1}$. If two people riding in the car have a combined mass of 160 kg, find the frequency of vibration of the car, when it is driven over a pot hole in the road. Assume the weight is evenly distributed.
7. Show that the total energy of the vibrating mass and spring is constant.
- (a)
- (b) A block of mass 4.0 kg is dropped from a height of 0.80 m on to a spring of spring constant $k = 1960 \text{ Nm}^{-1}$, find the maximum distance through which the spring will be compressed.
8. What is simple pendulum? Derive the relation for time period of simple pendulum.
- (a)
- (b) A spring, whose spring constant is 80.0 Nm^{-1} vertically supports a mass of 1.0 kg in the rest position. Find the distance by which the mass must be pulled down, so that on being released, it may pass the mean position with a velocity of 1.0 ms^{-1} .
9. What is simple pendulum? Show that simple pendulum executes SHM. Find out its time period.
- (a)
- (b) A 100.0 g body hung on a spring elongates the spring by 4.0 cm. When a certain object is hung on the spring and set vibrating. its period is 0.568 s. What is the mass of the object pulling the spring?

MCQs Ans Key.

Q:1 (B)

Q:2 (B)

Q:3 (D)

Q:4 (A)

Q:5 (B)

Q:6 (D)

Q:7 (D)

Q:8 (B)

Q:9 (D)

Q:10 (B)

Q:11 (A)

Q:12 (B)

Q:13 (D)

Q:14 (A)

Q:15 (A)

Q:16 (B)

Q:17 (A)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Mathematics-11	Date:		Time:	
Questions Type	Type 1 - MCQs Test - Marks=20				
Test Syllabus:	Unit-7,				

O Four possible answers A, B, C & D to each question are given. Circle the correct one. (20x1=20)

- 1 If $n = 1$, then value of $n | n - 1$ is:
(A) Zero (B) 1 (C) 2 (D) -1
- 2 $\frac{6!}{3!3!} = \underline{\hspace{2cm}}$:
(A) 6 (B) 8 (C) 10 (D) 20
- 3 $!) =$
(A) 0 (B) 1 (C) -1 (D) 2
- 4 Number of signals given by 5 flags of different colours using 3 flags at a time equals.
(A) 30 (B) 40 (C) 50 (D) 60
- 5 If ${}^n P_2 = 30$ then $n =$ ____:
(A) 6 (B) 4 (C) 5 (D) 8
- 6 **The number of signals that can be made by hoisting 6 flags of different colors one above the other, when any of them may be hoisted at once is:**
(A) 720 (B) 1950 (C) 1956 (D) None of these.
- 7 ${}^n C_r \times r! = \underline{\hspace{2cm}}$:
(A) ${}^{n+1} P_r$ (B) ${}^n P_{r+1}$ (C) ${}^{n-1} P_r$ (D) ${}^n P_r$
- 8 If ${}^n C_{12} = {}^n C_6$, then n is:
(A) 12 (B) 16 (C) 18 (D) None of these.
- 9 **The number of diagonals that can be formed by joining the angular points of a 10-sided figure is:**
(A) 40 (B) 42 (C) 43 (D) 45
- 10 **The number of diagonals of a hexagon is:**
(A) 3 (B) 6 (C) 9 (D) 12
- 11 A fair coin is tossed then probability of head is:
(A) 1 (B) $\frac{1}{2}$ (C) 2 (D) $\frac{1}{3}$
- 12 For an event A, the range of $P(A)$ is:
(A) $0 < P(A) \leq 1$ (B) $0 \leq P(A) < 1$ (C) $0 \leq P(A) \leq 1$ (D) $0 < P(A) < 1$
- 13 If A and B are independent events and $P(A) = \frac{5}{7}$ and $P(B) = \frac{7}{9}$, then $P(A \cap B)$ is:
(A) $\frac{5}{7}$ (B) $\frac{7}{9}$ (C) $\frac{9}{7}$ (D) $\frac{5}{9}$
- 14 Pakistan and India play a hockey match, probability that Pakistan will win:
(A) $\frac{1}{2}$ (B) $\frac{1}{4}$ (C) $\frac{1}{3}$ (D) 1
- 15 **Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn bears a number which is a multiple of 3 ?**
(A) $\frac{3}{20}$ (B) $\frac{3}{10}$ (C) $\frac{2}{5}$ (D) None of the above
- 16 **Tickets numbered from 1 to 20 are mixed up and a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 7 ?**
(A) $\frac{1}{15}$ (B) $\frac{1}{2}$ (C) $\frac{2}{5}$ (D) None of the above
- 17 **A bag contains 6 black balls and 8 white balls. One ball is drawn at random. What is the probabilities of that the ball drawn is white ?**
(A) $\frac{4}{7}$ (B) $\frac{3}{4}$ (C) $\frac{4}{3}$ (D) None of the above
- 18 **In a simultaneous throw of two dice, what is the probability of getting a total of 7 ?**
(A) $\frac{1}{6}$ (B) $\frac{7}{12}$ (C) $\frac{7}{36}$ (D) None of the above
- 19 **Six bulbs are planted in a ring and two do not grow. The probability that the two that do not grow are next to each other is:**
(A) $\frac{1}{5}$ (B) $\frac{2}{5}$ (C) $\frac{3}{5}$ (D) None of these.
- 20 If E and F be events in a sample space such that $P(E \cup F) = 0.8$, $P(E \cap F) = 0.3$ and $P(E) = 0.5$, then $P(F)$ is:
(A) 0.6 (B) 1 (C) 0.8 (D) None

MCQs Ans Key.

Q:1 (B)

Q:2 (D)

Q:3 (B)

Q:4 (C)

Q:5 (A)

Q:6 (C)

Q:7 (D)

Q:8 (C)

Q:9 (D)

Q:10 (C)

Q:11 (B)

Q:12 (C)

Q:13 (D)

Q:14 (C)

Q:15 (B)

Q:16 (C)

Q:17 (A)

Q:18 (A)

Q:19 (B)

Q:20 (A)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Mathematics-11	Date:		Time:	
Questions Type	Type 1 - MCQs Test - Marks=20				
Test Syllabus:	Unit-7,				

O Four possible answers A, B, C & D to each question are given. Circle the correct one. (20x1=20)

- 1 $\frac{(n+1)(n)(n-1)}{3 \times 2 \times 1} = \dots\dots\dots$
(A) $\frac{(n+1)!}{3!(n+2)!}$ (B) $\frac{(n+2)!}{3!(n-2)!}$ (C) $\frac{(n+1)!}{3!(n-2)!}$ (D) None of these.
- 2 $\frac{100!}{50!}$ can be written as:
(A) $2^{50}.1.3.5. \dots .99$ (B) $2^{50}.1.2.3. \dots .99$ (C) $2^{50}.2.4.6. \dots .99$ (D) None of these.
- 3 Number of signals given by 5 flags of different colours using 3 flags at a time equals.
(A) 30 (B) 40 (C) 50 (D) 60
- 4 How many different numbers can be formed by taking 4 out of the six digits 1, 2, 3, 4, 5, 6
(A) 360 (B) 120 (C) 366 (D) None of these.
- 5 Numbers are formed by using all the digits 1, 2, 3, 4, 5, 6 no digit being repeated, then the numbers which are divisible by 5 are:
(A) 110 (B) 120 (C) 122 (D) 124
- 6 The number of ways of arranging one white, one blue, one red and two yellow beads on a ring is:
(A) 5 (B) 6 (C) 7 (D) None of these.
- 7 Total number of different number plates that can be formed if each is to contain the three letters L, H and R followed by the three digits 1, 2 and 3 is:
(A) 34 (B) 36 (C) 37 (D) None of these.
- 8 The number of ways of arranging n unlike objects in a ring when clockwise and anticlockwise arrangements are different is:
(A) n! (B) (n-1)! (C) $\frac{(n-1)!}{2}$ (D) None of these.
- 9 Number of permutations of n different things taken r at a time is denoted by:
(A) ${}^n C_r$ (B) ${}^n P_r$ (C) n! (D) None of these.
- 10 How many triangles can be formed by joining the vertices of the polygon having 5 sides.
(A) 20 (B) 15 (C) 10 (D) None of these.
- 11 Hammad has six friends. He can invite one or more of them to a party in:
(A) 60 ways (B) 61 ways (C) 63 ways (D) None of these.
- 12 Range of the probability of an event E is:
(A) (0, 1) (B) [0, 1] (C) [0, 1) (D) (0, 1]
- 13 A die is rolled then n(S) equals:
(A) 36 (B) 6 (C) 1 (D) 9
- 14 If A and B are independent events, then $P(A \cap B)$:
(A) $P(A) + P(B)$ (B) $P(A) - P(B)$ (C) $P(A)P(B)$ (D) $P(A) + P(B) - P(A \cap B)$
- 15 For two events A and B if $P(A) = P(B) = \frac{1}{2}$, then $P(A \cap B)$:
(A) $\frac{1}{4}$ (B) $\frac{1}{2}$ (C) 1 (D) zero
- 16 Ten pupils are placed at random in a line. What is the probability that the two youngest pupils are separated:
(A) $\frac{1}{5}$ (B) $\frac{2}{5}$ (C) $\frac{3}{5}$ (D) $\frac{4}{5}$
- 17 Total three digit positive integers are:
(A) 900 (B) 999 (C) $9 \times 3!$ (D) None of these.
- 18 What is the probability that a number selected from the numbers 1, 2, 3, 4, 5,, 16 is a prime number is ?
(A) $\frac{1}{16}$ (B) $\frac{5}{8}$ (C) $\frac{3}{8}$ (D) None of the above
- 19 Six bulbs are planted in a ring and two do not grow. The probability that the two that do not grow are next to each other is:
(A) $\frac{1}{5}$ (B) $\frac{2}{5}$ (C) $\frac{3}{5}$ (D) None of these.
- 20 If E and F be events in a sample space such that $P(E \cup F) = 0.8$, $P(E \cap F) = 0.3$ and $P(E) = 0.5$, then $P(F)$ is:
(A) 0.6 (B) 1 (C) 0.8 (D) None

MCQs Ans Key.

Q:1 (C)

Q:2 (A)

Q:3 (C)

Q:4 (A)

Q:5 (B)

Q:6 (B)

Q:7 (B)

Q:8 (B)

Q:9 (B)

Q:10 (C)

Q:11 (C)

Q:12 (B)

Q:13 (B)

Q:14 (C)

Q:15 (A)

Q:16 (D)

Q:17 (A)

Q:18 (C)

Q:19 (B)

Q:20 (A)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Mathematics-11	Date:		Time:	
Questions Type	Type 3 - MCQs + SQs Test - Marks=30				
Test Syllabus:	Unit-7,				

O Four possible answers A, B, C & D to each question are given. Circle the correct one. (10x1=10)

- 1 The factorial form of $\frac{10.9}{2.1}$ is:
(A) $\frac{|10}{|2}$ (B) $\frac{|10}{|8|2}$ (C) $\frac{|10|-8}{|2}$ (D) $\frac{|8}{|4}$
- 2 $\frac{100!}{50!}$ can be written as:
(A) $2^{50}.1.3.5. \dots .99$ (B) $2^{50}.1.2.3. \dots .99$ (C) $2^{50}.2.4.6. \dots .99$ (D) None of these.
- 3 The value of ${}^{20}P_3$ is:
(A) 4068 (B) 6840 (C) 20! (D) 17!
- 4 The number of ways of dealing the hand of 4 cards from an ordinary pack of 52 playing cards is:
(A) 270725 (B) 260625 (C) 279725 (D) None of these.
- 5 How many triangles can be formed by joining the vertices of the polygon having 12 sides.
(A) 202 (B) 220 (C) 110 (D) None of these.
- 6 Three unbiased coins are tossed. What is the probability of getting exactly two heads ?
(A) $\frac{1}{3}$ (B) $\frac{3}{4}$ (C) $\frac{3}{8}$ (D) None of the above
- 7 Tickets numbered from 1 to 20 are mixed up and a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 7 ?
(A) $\frac{1}{15}$ (B) $\frac{1}{2}$ (C) $\frac{2}{5}$ (D) None of the above
- 8 A dice is thrown. What is the probability to get an even number ?
(A) 1 (B) 3/4 (C) 1/2 (D) None of the above
- 9 One card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is either a red card or a king ?
(A) $\frac{6}{13}$ (B) $\frac{1}{2}$ (C) $\frac{7}{13}$ (D) None of the above
- 10 A bag contains 8 red and 5 white balls. 2 ball is drawn at random. What is the probability that both ball are white ?
(A) $\frac{5}{16}$ (B) $\frac{2}{13}$ (C) $\frac{3}{26}$ (D) $\frac{5}{39}$

Q.2 Write short answer of the following questions. (10x2=20)

- (i) Write $n(n-1)(n-2) \dots (n-r+1)$ in the factorial form.
- (ii) Define permutation.
- (iii) Evaluate 9P_8 .
- (iv) Find the value of n when ${}^{11}P_n = 11.10.9$
- (v) How many signals can be given by 5 flags of different colours, using 3 flags at a time?
- (vi) If ${}^nC_8 = {}^nC_{12}$ find n.
- (vii) Evaluate ${}^{12}C_3$.
- (viii) How many triangles can be formed by joining the vertices of 5 sided figures?
- (ix) Find the number of diagonals of 12-sided figure.
- (x) Define Mutually Exclusive events.

MCQs Ans Key.

Q:1 (B)

Q:2 (A)

Q:3 (B)

Q:4 (A)

Q:5 (B)

Q:6 (C)

Q:7 (C)

Q:8 (C)

Q:9 (C)

Q:10 (D)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Mathematics-11	Date:		Time:	
Questions Type	Type 9 - Short Test (No Choice)- Marks=35				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(5x1=5)

- How many different numbers can be formed by taking 4 out of the six digits 1, 2, 3, 4, 5, 6
(A) 360 (B) 120 (C) 366 (D) None of these.
- The number of combinations of the letters of the word 'COLLEGE' taken four at a time are:
(A) 18 (B) 19 (C) 25 (D) None of these.
- The number of ways of arranging n unlike objects in a ring when clockwise and anticlockwise arrangements are same is:
(A) $n!$ (B) $(n-1)!$ (C) $\frac{(n-1)!}{2}$ (D) None of these.
- In a simultaneous throw of two dice, what is the probability of getting a total of 7?
(A) $\frac{1}{6}$ (B) $\frac{7}{12}$ (C) $\frac{7}{36}$ (D) None of the above
- A dice is rolled, the probability that it shows an even number is:
(A) 1, 3, 5 (B) 2, 4, 6 (C) $\frac{1}{2}$ (D) None of these.

Q.2 Write short answers of the following questions.

(5x2=10)

- Write $(n+2)(n+1)(n)$ in factorial form.
- Write $n(n-1)(n-2) \dots (n-r+1)$ in the factorial form.
- Evaluate $\frac{9!}{2!(9-2)!}$.
- Prove that ${}^n P_r = {}^{n-1} P_r + r \times {}^{n-1} P_{r-1}$.
- Find the value of n and r when ${}^n C_r = 35$ and ${}^n P_r = 210$.

NOTE: Attempt the following questions.

(10x2=20)

- How many arrangements of the letters of the word ATTACKED can be made if each arrangement begins with C and ends with K.
 - Determine the probability of getting 2 heads in two successive tosses of a balanced coin.
- Prove that ${}^{n-1} C_r + {}^{n-1} C_{r-1} = {}^n C_r$.
 - Prove that (with usual notations) ${}^n C_r + {}^n C_{r-1} = {}^{n+1} C_r$.

MCQs Ans Key.

Q:1 (A)

Q:2 (A)

Q:3 (C)

Q:4 (A)

Q:5 (C)



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Mathematics-11	Date:		Time:	
Questions Type	Type 9 - Short Test (No Choice)- Marks=35				
Test Syllabus:	Unit-7,				

Q.1 Circle the Correct Answers.

(5x1=5)

- The value of 6P_1 is:
(A) 18 (B) 12 (C) 6 (D) 0
- Numbers of six digits are formed from the digits 4, 5, 6, 7, 8, 9, no digit being repeated. How many of them are not divisible by 5?
(A) 200 (B) 400 (C) 600 (D) None of these.
- If ${}^{20}C_{r+4} = {}^{20}C_{2r+1}$ then $r =$ _____
(A) 1 (B) 2 (C) 3 (D) 4
- Tickets numbered from 1 to 20 are mixed up and a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 7?
(A) $\frac{1}{15}$ (B) $\frac{1}{2}$ (C) $\frac{2}{5}$ (D) None of the above
- A dice is thrown. What is the probability to get an odd number?
(A) 1 (B) $\frac{3}{4}$ (C) $\frac{1}{2}$ (D) None of the above

Q.2 Write short answers of the following questions.

(5x2=10)

- Write $\frac{(n+1)(n)(n-1)}{3 \cdot 2 \cdot 1}$ into factorial form.
- How many 3-digit numbers can be formed by using each one of the digits 2,3,5,7,9 only once.
- In how many ways can a necklace of 8 beads of different colours be made?
- Prove that: ${}^nC_r = {}^nC_{n-r}$
- Write the sample space for tossing a coin three times.

NOTE: Attempt the following questions.

(10x2=20)

- 3(a) Prove that ${}^{n-1}C_r + {}^{n-1}C_{r-1} = {}^nC_r$.
- (b) How many 6-digit numbers can be formed, without repeating any digit from the digits 0,1,2,3,4,5? In how many of them will 0 be at the tens place?
- 4(a) Two dice are thrown. What is the probability that the sum of the number of dots appearing on them is 4 or 6?
- (b) How many members greater than 1000,000 can be formed from the digits 0,2,2,2,3,4,4?

MCQs Ans Key.

Q:1 (C)

Q:2 (C)

Q:3 (C)

Q:4 (C)

Q:5 (C)



SMART TEST SERIES

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Name:		Roll#:		Class:	Inter Part-I
Subject:	Mathematics-11	Date:		Time:	
Questions Type	Type 15 - Full Test - Board Paper Pattern - Marks=100				
Test Syllabus:	Unit-7,				

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (20x1=20)

- 1 $\frac{3!}{0!}$ equals:
(A) 3 (B) 6 (C) ∞ (D) 12
- 2 $\frac{6!}{3!3!} = \underline{\hspace{2cm}}$:
(A) 6 (B) 8 (C) 10 (D) 20
- 3 The number of ways of arranging n unlike objects in a ring when clockwise and anticlockwise arrangements are different is:
(A) $n!$ (B) $(n-1)!$ (C) $\frac{(n-1)!}{2}$ (D) None of these.
- 4 How many arrangements can be made of 4 letters a, b, c, d taken 2 at a time.
(A) 8 (B) 10 (C) 12 (D) 14
- 5 Hammad has six friends. He can invite one or more of them to a party in:
(A) 60 ways (B) 61 ways (C) 63 ways (D) None of these.
- 6 The number of diagonals that can be formed by joining the angular points of a 10-sided figure is:
(A) 40 (B) 42 (C) 43 (D) 45
- 7 The number of diagonals of a hexagon is:
(A) 3 (B) 6 (C) 9 (D) 12
- 8 ${}^nC_5 = {}^nC_4$, then n is:
(A) 9 (B) 7 (C) 6 (D) 5
- 9 Number of signals can be made with 4 flags when one flag is used at a time are:
(A) 4C_0 (B) 4C_1 (C) 4C_2 (D) 4C_3
- 10 $\frac{n!}{(n-r)!r!}$ is equal to:
(A) rC_n (B) rP_n (C) nC_r (D) nP_r
- 11 If S is sample space and E is an event, then $P(E) = \underline{\hspace{2cm}}$:
(A) $0 < P(E) < 1$ (B) $-1 < P(E) < 1$ (C) $0 \leq P(E) \leq 1$ (D) $-1 \leq P(E) \leq 1$
- 12 For an event A , the range of $P(A)$ is:
(A) $0 < P(A) \leq 1$ (B) $0 \leq P(A) < 1$ (C) $0 \leq P(A) \leq 1$ (D) $0 < P(A) < 1$
- 13 A coin is tossed once then $P(S)$ is equal to:
(A) $\frac{1}{3}$ (B) $\frac{1}{2}$ (C) 2 (D) 1
- 14 If two dice are thrown simultaneously, then the number of elements in the sample space are:
(A) 6 (B) 12 (C) 24 (D) 36
- 15 In a single throw of two dice what is the probability of not getting the same number on both the dice?
(A) $\frac{1}{6}$ (B) $\frac{4}{3}$ (C) $\frac{5}{6}$ (D) None of the above
- 16 Tickets numbered from 1 to 20 are mixed up and a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 7?
(A) $\frac{1}{15}$ (B) $\frac{1}{2}$ (C) $\frac{2}{5}$ (D) None of the above
- 17 A die is thrown, what is the probability to get 3 dots:
(A) 7! (B) $\frac{1}{6}$ (C) $\frac{2}{6}$ (D) $\frac{5}{6}$
- 18 A fair coin is tossed twice then probability of getting tail it both times is:
(A) $\frac{1}{2}$ (B) $\frac{1}{3}$ (C) $\frac{1}{4}$ (D) 0
- 19 What is the probability of getting a king or a queen in a single draw from a pack of 52 cards?
(A) $\frac{1}{26}$ (B) $\frac{1}{13}$ (C) $\frac{2}{13}$ (D) None of the above
- 20 If E and F are independent events such that $P(E) = 0.7$ and $P(F) = 0.3$, then $P(E \cap F)$ is :
(A) 0.4 (B) 1 (C) .021 (D) None



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Name:		Roll#:		Class:	Inter Part-I
Subject:	Mathematics-11	Date:		Time:	
Questions Type:	Type 15 - Full Test - Board Paper Pattern - Marks=100				
Test Syllabus:	Unit-7,				

ESSAY TYPE

(SECTION-I)

MAXIMUM MARKS-50

Q.2 Write short answers to any EIGHT (8) of the following questions.

(8x2=16)

- Evaluate $\frac{6!}{3!3!}$ and $\frac{8!}{4!2!}$.
- Evaluate: $\frac{8!}{4!2!}$
- Evaluate ${}^{12}P_5$.
- Show that ${}^nP_r = n \times {}^{n-1}P_{r-1}$.
- How many 3-digit numbers can be formed by using each one of the digits 2,3,5,7,9 only once.
- How many numbers greater than 1000,000 can be formed from digits 0,2,2,2,3,4,4?
- In how many way 4 keys can be arranged on a circular key ring?
- How many Necklaces can be made from 6 beads of different colours?
- Find the value of n, when ${}^nC_{12} = {}^nC_6$.
- Write the sample space for tossing a coin three times.
- Write the formula for addition of probabilities.
- Find the probability that sum of dots appearing in two successive throws of two dice every time 7.

Q.3 Write short answers to any EIGHT (8) of the following questions.

(8x2=16)

- Write $(n+2)(n+1)(n)$ in factorial form.
- Define permutation.
- Evaluate 9P_8 .
- Find the value of n when ${}^{11}P_n = 11.10.9$
- Find the value of n when ${}^nP_4 : {}^{n-1}P_3 = 9:1$
- How many signals can be given by 5 flags of different colours, using 3 flags at a time?
- If ${}^nC_8 = {}^nC_{12}$ find n.
- Evaluate ${}^{12}C_3$.
- Evaluate ${}^{20}C_{17}$.
- Evaluate nC_4 .
- Find the number of diagonals of 5 sided figure.
- Find the value of n and r when ${}^nC_r = 35$ and ${}^nP_r = 210$.

Q.4 Write short answers to any NINE (9) of the following questions.

(9x2=18)

- Write in factorial form $\frac{52.51.50.49}{4.3.2.1}$.
- Find the value of n when ${}^nP_2 = 30$.
- How many words can be formed from OBJECT using all letters?
- Evaluate ${}^{20}P_3$ without calculator.
- Define Circular Permutation.
- In how many ways can a necklace of 8 beads of different colours be made?
- Find the number of the diagonals of a 6-sided figure.
- Find the value of n, when ${}^nC_5 = {}^nC_4$.
- State "The laws of probability for addition".
- A natural number is chosen out of the first fifty natural numbers. What is the probability that the chosen number is a multiple of 3 or of 5?
- Determine that probability of getting 2 heads in two successive tosses of a balanced coin.
- Two coins are tossed twice each. Find the probability that the head appears on the first toss and the same faces appear in the two tosses.
-

Two cards are drawn from a deck of 52 playing cards. If one card is drawn and replaced before drawing the second card, find the probability that both the cards are aces.

ESSAY TYPE

(SECTION-II)

MAXIMUM MARKS-30

NOTE: Attempt any THREE (3) questions.

5. A box contains 10 red, 30 white and 20 black marbles. A marble is drawn at random. Find the probability that it is either red or white.
- (a)
- (b) Find the values of n and r , when ${}^nC_r = 35$ and ${}^nP_r = 210$.
6. Two dice are thrown. What is the probability that the sum of the number of dots appearing on them is 4 or 6?
- (a)
- (b) How many arrangements of the letters of the word ATTACKED can be made if each arrangement begins with C and ends with K.
7. Determine the probability of getting 2 heads in two successive tosses of a balanced coin.
- (a)
- (b) How many members greater than 1000,000 can be formed from the digits 0,2,2,2,3,4,4?
8. How many (i) diagonals (ii) triangles can be formed by joining the vertices of the polygon having 5 sides?
- (a)
- (b) How many 6-digit numbers can be formed, without repeating any digit from the digits 0,1,2,3,4,5? In how many of them will 0 be at the tens place?
9. Prove that ${}^{n-1}C_r + {}^{n-1}C_{r-1} = {}^nC_r$.
- (a)
- (b) How many numbers greater than 100,000 can be made from the digits 0,2,2,2,3,4,4?

MCQs Ans Key.

Q:1 (B)

Q:2 (D)

Q:3 (B)

Q:4 (C)

Q:5 (C)

Q:6 (D)

Q:7 (C)

Q:8 (A)

Q:9 (B)

Q:10 (C)

Q:11 (C)

Q:12 (C)

Q:13 (D)

Q:14 (D)

Q:15 (C)

Q:16 (C)

Q:17 (B)

Q:18 (C)

Q:19 (C)

Q:20 (C)