THE ASIAN SCHOOL, DEHRADUN
HOLIDAY HOMEWORK FOR WINTER VACATION 2021 FOR CLASS XII

ENGLISH:

General Instructions –
   1. Do the given HW as per given instructions with each question.
   2. Do Q 2,3,4,& 5 in A4 sheets .The folder is to be submitted in January on the day of school reopening .

1. **READ AND REVISE ALL THE WORK AND LITERATURE CHAPTERS(2nd Term Syllabus)**

   Writing Skills:
2. You have read an advertisement in the newspaper, 'Pune Times' for the post of software engineer in Alexa Software, Pune. You believe that you possess the requisite qualifications and experience and your innovative ideas will prove an asset to the company. Write a **Job-application** in 120 –150 words emphasising your strong points and your suitability for the post. Also include your biodata. You are Saurabh/Shikha, 12, Mall Road, Chandigarh.
3. <u>Write an invitation</u> for the occasion of your elder brother's wedding.
4. <u>Draft a reply</u> expressing your inability to attend your friend's brother's wedding.
5. Last week an NGO, 'Health for All' organised a Vaccination Drive in your school at Vasant Vihar for local residents. You are Ranjit/Sumita, and you visited the venue.<u>Write a report</u> for a localnewspaper in 120-150 words covering arrangements such as registration, vaccination, observation room, policemen and health workers on duty etc.
6. **ENGLISH PROJECT(Group-wise asexplained in class)** ProjectGuidelines etc. will be given to students in their WhatsApp Class group separately.
7. **SUGGESTED READING**
   A)THE BRAVE: PARAM VIR CHAKRA STORIES BY RACHNA BISHT RAWAT.
   B)TO KILL A MOCKING BIRD – BY HARPER LEE
   C) A SOLDIER'S GENERAL AN AUTOBIOGRAPHY BY GENERAL J.J. SINGH
8. **SUGGESTED FILM TO WATCH**
   A) GANDHI - DIRECTED BY RICHARD ATTEN BOROGH (MUST WATCH AS IT IS REFERENCE TO TEXT "THE INDIGO")

Hindi: 1. अनुच्छेद लेखन–
   क) समस्याओं से घिरा भारत
   ख) **कला** और संस्कृति का **प्रतीक** उत्तराखंड

   2. पत्र–लेखन
   क) संपादक के नाम पत्र लिखें, जिसमें हिन्दी भाषा के महत्व को रेखांकित करते हुए हिन्दी के प्रयोग पर बल दिया गया हो।
   ख) शिक्षामंत्री को इस आशय का पत्र लिखिए कि वरिष्ठ माध्यमिक विद्यालयों में सभी छात्र–छात्राओं के लिए राष्ट्रीय सेवा योजना को अनिवार्य किया जाए।
   3. नाटक की कहानी बेशक भूतकाल या भविष्यकाल से सम्बद्ध हो, तब भी उसे वर्तमान काल में ही घटित होना पड़ता है। इस धारणा के पीछे क्या कारण हो सकते है।
   4. कहानी में 'कथानक' का क्या महत्व है। इसमें कल्पना और यथार्थ मिला रहता है स्पष्ट करें।
   5. कहानी को नाटक बनाते समय किन बातों का ध्यान रखना आवश्यक होता है?
   6. रेडियो नाटक की कहानी चुनने में किन बातों का ध्यान रखना चाहिए।
   7. इम्तिहान विषय पर 200–300 शब्दों का एक लेख लिखिए।
   8. सी0बी0एस0सी0 बोर्ड द्वारा सत्र–1 तथा सत्र–2 के मूल्यांकन का विद्यार्थियों के लिए उपयोगिता विषय पर 300–400 का एक फीचर लिखिए।

MATHEMATICS :

(A) WORKSHEETS , TERM-2 (TO BE SOLVED IN THE MATHS HOMEWORK NOTEBOOKS)

Q1 Evaluate the integral: $\int_0^{\pi/2} \log(\tan x + \cot x)\,dx$.

Q2. Integrate w.r.t.: $\dfrac{2\sin 2x - \cos x\,dx}{6 - \cos 2x - 4\sin x}$.

Q3 Evaluate the integral: $\int \dfrac{\cos 2x - \cos 2\beta}{\cos x - \cos \beta}\,dx$

Q4 Evaluate $\int \dfrac{x^2 + x + 1\ \ dx}{(x+2)(x^2+1)}$

Q 5 Evaluate $\int_0^{\frac{\pi}{2}} \log \sin x\ dx$

Q6 Evaluate the integral: $\int_0^{\pi/2} \log(\tan x + \cot x)\,dx$.

Q7 Find the value of k if $\int_0^1 (3x^2 + 2x + k)\,dx = 0$,

Q8 Evaluate : $\int_0^{\pi/4} \frac{\sin x + \cos x}{9 + 16 \sin x} dx$

Q9 Evaluate: $\int_0^{\pi/2} (2 \log \sin x - \log \sin 2x) dx$

Q10 Evaluate $\int \frac{dx}{x(x^3 + 8)}$

Q11 Evaluate : $(3-2x) \int \sqrt{2 + x - x^2} dx$

Q12 Evaluate : $\int \frac{\sin x \, dx}{\sin(x+a)}$

CHAPTER 8 APPLICATION OF INTEGRALS

Q1 Using integration find the area bounded by the lines x + 2y =2 , y –x =1, and 2x + y =7

Q2 Prove that the curves y^2 = 4x and x^2 = 4y divide the area of the square bounded by x=0,x=4 and y=0 and y=4 into three equal parts.

Q3 Using integration find the area of the triangular region whose vertices are (2,-2), (4,3) and (1,2).

Q4 Sketch the region common to the circle $x^2 + y^2$ =20 and parabola y^2 = 8x. Also find the area of region between them using integration.

Q5 Using integration find the area of region bounded by the curves: 4y = $3x^2$, and 3x-2y +12 =0.

Q6 Sketch the graph of y = I x + 3 I and evaluate the area under the curve y = I x + 3 I above x-axis and between x = - 6 to x = 0

Q7 Find the area bounded by the curves y = x^2 and y = $|x|$

Q8 Using integration find the area of region bounded by the curves y^2 = 4x, x =1 , x =4 and the x axis in the first quadrant.

Q9 Find the area of region bounded by the curves y = sinx and y = cosx in the first quadrant.

Q10 Find the area of region in the first quadrant enclosed by the x axis , the lines x = $\sqrt{3}$y and the circle $x^2 + y^2 = a^2$

CHAPTER 9 DIFFERENTIAL EQUATIONS

Q1 What is degree of the differential equation: $d^2y/dx^2 = \left[1 + (dy/dx)^2\right]^{3/2}$

Q2 Find solution of the differential equations: $\sin x \frac{dy}{dx} + y \cos x = 2\sin^2 x \cos x$.

Q3 Solve the differential equation: $2x^2 \frac{dy}{dx} - 2xy + y^2 = 0$ at y (e) = e ;

Q4 Solve the differential equation: $(x^2 + 1)\frac{dy}{dx} + 2xy = (x^2+4)^{1/2}$

Q6 Find the particular solution of the differential equation : (xlogx) dy/dx + y = $2\frac{\log x}{x}$; at x=1 and y=0.

Q7 Solve the differential equation: x^2dy + (xy + y^2)dx =0 ; given that at y=1 , x=1.

Q8 Solve the differential equation : $\sec^2 x$ tany dx + $\sec^2 y$ tanxdy = 0.

Q9 Show that the differential equation: x^2dy + (xy + y^2) dx = 0 is homogeneous and solve it.

Q10 Evaluate the differential equation: $x\frac{dy}{dx} + y$ = xcosx + sinx , given that y = 1 at x = π/2.

Q11 Write the degree of the differential equation, y = $x\frac{dy}{dx} + a \sqrt{1 + (\frac{dy}{dx})^2}$

Q12 Find the particular solution of the differential equation : log $(\frac{dy}{dx})$ = 3x + 4y , given that y = 0 when x = 0.

Q13 Solve the differential equation; $(1+ x^2)\frac{dy}{dx} + y = \tan^{-1} x$

Q14 write the integrating factor for the equation and solve it $(1+ y^2) + (2xy - y\cot x) \frac{dy}{dx}$ =0.

Q15 What is the degree and order of the differential equation. $\frac{d^4y}{dx^4} + \sin (\frac{d^3y}{dx^3}) = 0$.

(B):- THE STUDENTS HAVE TO PREPARE MATHS ACTIVITY FILE FOR THE TERM-2 , FOR THE INTERNAL ASSSESSMENTS IN MATHEMATICS, AS PER THE GUIDELINES ISSUED BY CBSE.

GUIDELINES AND INSTRUCTIONS FOR PREPARING THE ACTIVITY FILE:

➢ The activities should be done in a loose ruled project sheets and fixed in a stick file.
➢ It should contain the following in the order

- INDEX
- ACKNOWLEDGEMENT
- The figures should be drawn with pencil.
- The headings should be written in black in and the content in blue ink.
- Use the graph sheets wherever required.
- Color pencil and pen can be used.
- Mention NAME OF THE SCHOOL, your NAME, CLASS AND SECTION, SUBJECT and SESSION in the activity file.
- Prepare a neat and clean creative activity file.

NOTE: THE PDF OF THE ACTIVITIES TO BE COMPLETED WIL BE SHARED IN THE CLASS WHATASPP GROUPS BY THE SUBJECT TEACHER.
THE HOLIDAY HOMEWORK HAS TO BE SUBMITTED AFTER THE WINTER VACATIONS.

PHYSICS: INSTRUCTIONS:

- Homework is to be done neatly in Physics Homework notebook.
- There are 50 questions. Students have to write all 50 questions in Homework notebook.

Q1.Name the part of the electromagnetic spectrum of wavelength 10-2 m and mention its one application.

Q2. Write the following radiations in ascending order in respect of their frequencies: X-rays, Microwaves, UV rays and radiowaves.

Q3. Name the electromagnetic radiation to which waves of wavelength in the range of 10^{-2} m belong. Give one use of this part of EI spectrum.

Q4. Name the part of electromagnetic spectrum which is suitable for
1. radar systems used in aircraft navigation
2. treatment of cancer tumours.

Q5. Name the EM waves used for studying crystal structure of solids. What is its frequency range?

Q6. Which part of electromagnetic spectrum has largest penetrating power?

Q7. Which part of electromagnetic spectrum is absorbed from sunlight by ozone layer?

Q8. A glass lens of refractive index 1.5 is placed in a trough of liquid. What must be the refractive index of the liquid in order to mark the lens disappear?

Q9. A converging lens of refractive index 1.5 is kept in a liquid medium having same refractive index. What would be the focal length of the lens in this medium?

Q10. How does the power of a convex lens vary, if the incident red light is replaced by violet light?

Q11. How does the angle of minimum deviation of a glass prism vary, if the incident violet light is replaced with red light?

Q12. Why does the bluish colour predominate in a clear sky?

Q13.How does the angle of minimum deviation of a glass prism of refractive index 1.5 change, if it is immersed in a liquid of refractiv index 1.3?

Q14. You are given following three lenses. Which two lenses will you use as an eyepiece and as an objective to construct an astronomic. telescope? (Delhi 2009)

Lenses	Power (P)	Aperture
L_1	3D	8 cm
L_2	6D	1 cm
L_3	10D	1 cm

Q15.Two thin lenses of power + 4D and – 2D are in contact. What is the focal length of the combination?

Q16. How does the fringe width of interference fringes change, when the whole apparatus of Young's experiment is kept in a liquid of refractive index 1.3?

Q17. How does the angular separation of interference fringes change in Young's experiment, if the distance between the slits increased?

Q18. State the reason, why two independent sources of light cannot be considered as coherent sources.

Q19. How does the angle of minimum deviation of a glass prism vary, if the incident violet light is replaced with red light?

Q20. What type of wave front will emerge from a (i) point source, and (ii) distant light source?

Q21. Draw a diagram to show refraction of a plane wave front incident in a convex lens and hence draw the refracted wave front.

Q22. How would the angular separation of interference fringes in Young's double slit experiment change when the distance between the slits and screen is doubled?

Q23. An electron and alpha particle have the same de-Broglie wavelength associated with them. How are their kinetic energies related to each other?

Q24. Two lines, A and B, in the plot given below show the variation of de-Broglie wavelength, λ versus 1Vv, Where V is the accelerating potential difference, for two particles carrying the same charge. Which one of two represents a particle of smaller mass ?
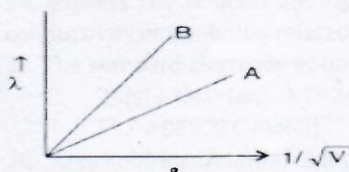

Q25. The figure shows a plot of three curves a, b, c, showing the variation of photocurrent vs. collector plate potential for three differer intensities I_1, I_2 and I_3 having   frequencies V_1, v_2 and v_3 respectively   incident   on   a   photosensitive   surfac
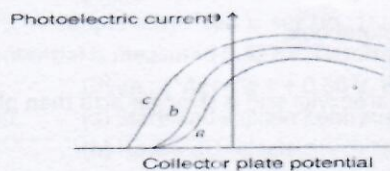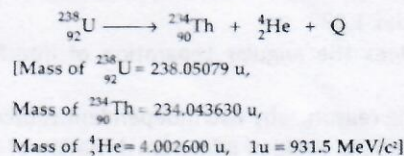

Point out the two curves for which the incident radiations have same frequency but different intensities.

Q26. The stopping potential in an experiment on photoelectric effect is 1.5 V. What is the maximum kinetic energy of the photoelectron emitted?

Q27. The maximum kinetic energy of a photoelectron is 3 eV. What is its stopping potential?

Q28. Show graphically, the variation of the de- Broglie wavelength (λ) with the potential (V) through which an electron is accelerated from rest.

Q29. The given graph shows the variation of photo-electric current (I) versus applied voltage (V) for two different photosensitive material and for two different intensities of the incident radiation. Identify the pairs of curves that correspond to different materials but same intensity of incident radiation.
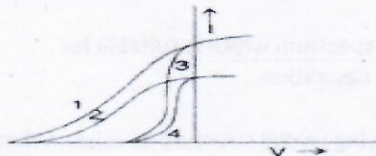
Q30. Define ionisation energy. What is its value for a hydrogen atom?

Q31. Write the expression for Bohr's radius in hydrogen atom.

Q32. What is the ratio of radii of the orbits corresponding to first excited state and ground state in a hydrogen atom?

Q33. The radius of innermost electron orbit of a hydrogen atom is 5.3×10^{-11} m. What is the radius of orbit in the second excited state?

Q34. Find the ratio of energies of photons produced due to transition of an electron of hydrogen atom from its
   (i) second permitted energy level to the first level, and
   (ii) the highest permitted energy level to the first permitted level.

Q35. The ground state energy of hydrogen atom is -13.6 eV. What are the kinetic and potential energies of electron in this state?

Q36. Why is the classical (Rutherford) model for an atom—of electron orbiting around the nucleus—not able to explain the atomic structure?

Q37. An electron and alpha particle have the same de-Broglie wavelength associated with them. How are their kinetic energies related to each other?

Q38. State the reason, why heavy water is generally used as a moderator in a nuclear reactor.

Q39. Two nuclei have mass numbers in the ratio 1: 2. What is the ratio of their nuclear densities?

Q40. Two nuclei have mass numbers in the ratio 1: 8. What is the ratio of their nuclear radii?

Q41. An electron and alpha particle have the same de- Broglie wavelength associated with them. How are their kinetic energies related to each other?

Q42. Two nuclei have mass numbers in the ratio 27:125. What is the ratio of their nuclear radii?

Q43. Calculate the energy released in MeV in the following nuclear reaction:

$$^{238}_{92}U \longrightarrow ^{234}_{90}Th + ^{4}_{2}He + Q$$

[Mass of $^{238}_{92}U$ = 238.05079 u,

Mass of $^{234}_{90}Th$ = 234.043630 u,

Mass of $^{4}_{2}He$ = 4.002600 u,   1u = 931.5 MeV/c²]

Q44. State the reason, why GaAs is most commonly used in making of a solar cell.

Q45. Why should a photodiode be operated at a reverse bias?

Q46. What happens to the width of depletion layer of a p-n junction when it is   (i) forward biased,   (ii) reverse biased?

Q47. What is the difference between an N-type and N type intrinsic semiconductor?

Q48. How does the width of depletion region of a p-n junction diode change under forward bias?

Q49. The graph shown in the figure represents a plot of current versus voltage for a given semi-conductor. Identify the region, if any, over which the semi-conductor has a negative resistance.
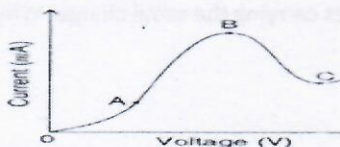
Q50. Plot a graph showing variation of current versus voltage for the material GaAs.

CHEMISTRY : INSTRUCTIONS:
   o   Homework is to be done neatly in Chemistry Homework notebook.
   o   There are 50 questions. Students have to write all 50 questions in Homework notebook.

1. Although phenoxide ion has more number of resonating structures than carboxylate ion, carboxylic acid is stronger acid than phenol. Why?

2. Give chemical tests to distinguish between the following pairs of compounds
       (a) Propanal and Propanone   (b) Acetophenone and Benzophenone

3. Describe the following:-
   (a) Cross Aldol Condensation   (b) Decarboxylation
4. Draw structures of the following derivatives   (a) Cyclopropanone oxime   (b) Semicarbazone of cyclobutanone
5. What is meant by the following terms? Give an example of reaction in each case.   (a) Cyanohydrin   (b) Imine
6. How do you convert ethanal into But-2-enal
7. Arrange the following compounds in increasing order of their reactivity in nucleophilic addition reactions
   Ethanal, Propanal, Propanone, Butanone
8. Give the names of the reagents to bring about the following transformations:-
   (a) Hexan-1-ol to hexanal   (b) Ethanenitrile to ethanal
9. How will you convert benzene into aniline?
10. Why are amines less acidic than alcohols of comparable molecular masses?
11. Why do primary amines have higher boiling point than tertiary amines?
12. Write short notes on the following:-   (a) Carbylamine Reaction   (b) Ammonolysis
13. Accomplish the following conversions:-
   (a) Benzoic acid to aniline (b) Benzene to m-bromophenol
14. Account :-
   (a) Gabriel phthalimide synthesis is preferred for synthesising primary amines.
   (b) Aniline does not undergo Friedal- Craft reaction.
15. How will you convert   (a) Ethanoic acid to methanamine   (b) Methanol to ethanoic acid.
16. Why does copper not replace hydrogen from acids?
17. Why E° values for Mn, Ni, Zn are more negative than expected?
18. Why first ionization enthalpy of Cr is lower than that of Zn?
19. Transition elements show high melting points. Why?
20. Although fluorine is more electronegative than oxygen, but the ability of oxygen to stabilize higher oxidation states exceeds that of fluorine. Why?
21. Although +3 oxidation states is the characteristic oxidation state of lanthanoids but cerium shows +4 oxidation state also. Why?
22. Why do transition elements exhibits higher enthalpy of Atomization?
23. Copper is regarded as transition metal though it has completely filled d- orbitals. Explain.
24. The melting and boiling points of Zn, Cd, Hg are low. Why?
25. Write the formulae of the following coordination compounds:- (a) hexaamminecoblat (III) sulphate (b) tetrabromidicuprate(II)
26. Account for the different magnetic behaviour of hexacyanoferrate(III) and hexafluoridoferrate(II)
27. What is meant by stability of coordination compound in solution?
28. Draw figure to show the splitting of d- orbitlas in an octahedral crystal field.
29. Do we call metal carbonyls as organometallics? Why or why not?
30. Give an example of a metal carbonyl having metal-metal bond.
31. Express the relation among the cell constant, the resistance of the solution in the cell and the conductivity of the solution. How is the conductivity of a solution related to its molar conductivity?
32. Two half-reactions of an electrochemical cell are given below :
   MnO_4^- (aq) + 8H+ (aq) + 5e− → Mn2+ (aq) + $4H_2O$ (I), E° = 1.51 V
   Sn2+ (aq) → Sn4+ (aq) + 2e−, E° = + 0.15 V.
Construct the redox reaction equation from the two half-reactions and calculate the cell potential from the standard potentials and predict if the reaction is reactant or product favoured.
33. Determine the values of equilibrium constant (Kc) and ΔG° for the following reaction :
   Ni(s) + 2Ag+ (aq) → Ni2+ (aq) + 2Ag(s),
   E° = 1.05 V
   (1F = 96500 C mol-1)
34. Express the relation among cell constant, resistance of the solution in the cell and conductivity of the solution. How is molar conductivity of a solution related to its conductivity?
35. The standard electrode potential (E°) for Daniel cell is +1.1 V. Calculate the ΔG° for the reaction
   Zn(s) + Cu2+(aq) → Zn2+(aq) + Cu(s)
   (1 F = 96500 C mol-1)
36. State Kohlrausch law of independent migration of ions. Why does the conductivity of a solution decrease with dilution?
37. Set up Nernst equation for the standard dry cell. Using this equation show that the voltage of a dry cell has to decrease with use.
38. Calculate the time to deposit 1.27 g of copper at cathode when a current of 2A was passed through the solution of CuSO4.
   (Molar mass of Cu = 63.5 g mol-1,1 F = 96500 C mol-1)
39. A copper-silver cell is set up. The copper ion concentration in it is 0.10 M. The concentration of silver ion is not known. The cell potential is measured 0,422 V. Determine the concentration of silver ion in the cell.
   Given : E°Ag+/Ag = + 0.80 V, E° Cu2+/Cu = + 0.34 V.
40.   (a) State and explain Kohlrausch law.
   (b) How much electricity in terms of Faradays is required to produce 20 g of calcium from molten CaCl2?

41. For a reaction R → P, half-life (t1/2) is observed to be independent of the initial concentration of reactants. What is the order of reaction?

42. A reaction is of second order with respect to a reactant. How will the rate of reaction be affected if the concentration of this reactant is (i) doubled, (ii) reduced to half?

43. A reaction is of first order in reactant A and of second order in reactant B. How is the rate of this reaction affected when (i) the concentration of B alone is increased to three times (ii) the concentrations of A as well as B are doubled?

44. The rate constant for a reaction of zero order in A is 0.0030 mol L-1 s-1. How long will it take for the initial concentration of A to fall from 0.10 M to 0.075 M?

45. Distinguish between 'rate expression' and 'rate constant' of a reaction.

46. (a) For a reaction A + B → P, the rate law is given by, r = k[A]1/2 [B]2.
What is the order of this reaction?
    (b) A first order reaction is found to have a rate constant k = 5.5 × 10-14 s-1. Find the half life of the reaction.

47. Define the following terms :   (a) Pseudo first order reaction.   (b) Half life period of reaction (t1/2).

48. For a chemical reaction R → P, variation in ln[R] vs time (f) plot is given below:
For this reaction: (i) Predict the order of reaction   (ii) What is the unit of rate constant (k)?
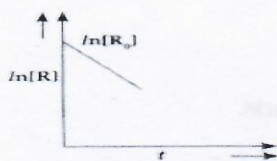
49. The rate constant for a first order reaction is 60 s-1. How much time will it take to reduce the initial concentration of the reactant to its 1/10th value?

50. For a first order reaction, show that time required for 99% completion is twice the time required for completion of 90% reaction.


BIOLOGY :

INSTRUCTIONS:

(i)   Homework is to be done neatly in Biology Homework notebook.

(ii)   There are 50 questions. Students have to write all 50 questions in Homework notebook.

Q1.	a) Explain the property that prevents normal cells from becoming cancerous.
	•b) All normal cells have inherent characteristic of becoming cancerous. Explain.
Q2.	Write the source and the effect on the human body of the following drugs : a) Morphine b) Cocaine c) Marijuana
Q3.	Name the type of cells the AIDS virus first enters into after getting inside the human body. Explain the sequence of events that the virus undergoes within these cells to increase their progeny.
Q4.	a) Name the infective stage of *Plasmodium* which Anopheles mosquito takes in along with the blood meal from an infected human.
	b) Why does the infection cause fever in humans?
	c) Give a flow chart of the life-cycle of this parasite passed in the insect.

Q5. The following table shows certain diseases, their causative organisms and symptoms. Fill the gaps.

S.N	NAME OF THE DISEASE	CAUSATIVE ORGANISM	SYMPTOMS
1	Ascariasis	Ascaris	a
2	Ringworm	b	Appearance of dry, scaly lesions on various parts of the body
3	Typhoid	c	d
4	Pneumonia	e	f
5	Amoebiasis	g	Inflammation in lower limbs

Q6.	a) Why is there a fear amongst the guardians that their adolescent wards may get trapped in drugs/alcohol abuse?
	b) Explain 'addiction' and 'dependence' in respect of drugs/alcohol abuse in youth.
	c) What is 'withdrawl' syndrome? List any two symptoms it is characterized by.
Q7.	a) It is generally observed that the children who had suffered from chicken pox in their childhood may not contract the same disease in their adulthood. Explain giving reasons the basis of such immunity in an individual. Name this kind of immunity
	b) What are interferons? Mention their role.

Q8.	a) How does the human body respond when vaccine is introduced into it?
	b) A heavily bleeding bruised road accident victim was brought to a nursing home. The doctor immediately gave him an injection to protect him against a deadly disease.
	i) What did the doctor inject into the patient's body?
	ii) How do you think this injection would protect the patient against the disease?
	iii) Name the disease against which this injection was given and the kind of immunity it provides.
Q9.	Milk starts to coagulate when Lactic Acid Bacteria (LAB) is added to warm milk as a starter. Mention any other two benefits that LAB provides.
Q10.	Name the blank spaces a, b, c and d in the table give below :

Q10 table:

TYPE OF MICROBE	NAME	COMMERCIAL PRODUCT
Bacterium	*Acetobacter aceti*	a
b	c	Citric acid
Bacterium	d	Butyric acid

| Q11.	Name the genus to which baculoviruses belong. Describe their role in the integrated pest management programme.
Q12.	Explain the different steps involved in sewage treatment before it can be released into natural water bodies.
Q13.	a) Given below is a list of six microorganisms. State their usefulness to humans.
	i) *Nucleopolyhedrovirus* ii) *Saccharomyces cerevisiae* iii) *Monascus purpureus* iv) *Trichoderma polysporum*
	v) *Penicillium notatum* vi) *Propionibacterium sharmanii*
	b) Why are the fruit juices brought from market more clearer as compared to those made at home?
	c) Recommend two microbes that can enrich the soil with nutrient.
Q14.	a) Organic farmers prefer biological control of diseases and pests to the use of chemicals for the same purpose. Justify.
	b) Give an example of a bacterium, a fungus and an insect that are used as biocontrol agents.
Q15.	How is DNA isolated in purified form from a bacterial cell?
Q16.	a) A recombinant vector with a gene of interest is inserted within the gene of Beta- galactosidase enzyme is introduced into a bacterium. Explain the method that would help in selection of recombinant colonies from non-recombinant ones.
	b) Why is this method of selection referred to as 'insertional inactivation'?
Q17.	How is the amplification of a gene sample of interest carried out using PCR? Explain.
Q18.	Explain the method by which a bacterial cell can be made 'competent'. Why is it essential to make bacterial cells 'competent' in recombinant DNA technology?
Q19.	How can DNA segments be separated, visualized and isolated? Explain.
Q20.	a) With the help of diagram show the different steps in the formation of recombinant DNA by action of restriction endonuclease enzyme EcoRI.
	b) How is the action of endonuclease different from that of exonuclease?
Q21.	a) Why are engineered vectors preferred by biotechnologists for transferring the desired genes into another organism?
	b) Explain how do "ori", "selectable markers" and "cloning sites" facilitate cloning into a vector.
Q22.	If a desired gene is identified in an organism for some experiments, explain the process of the following:
	i) Cutting this desired gene at specific location.
	ii) Synthesis of multiple copies of this desired gene.
Q23.	Why are genes encoding resistance to antibiotics considered useful selectable markers for *E. coli* cloning vector? Explain with the help of one example.
Q24.	a) Explain the significance of 'palindrome nucleotide sequence' in the formation of recombinant DNA.
	b) Write the use of restriction endnuclease in the above process.

	c)	"A very small sample of tissue or even a drop of blood can help determine paternity". Provide a scientific explanation to substantiate the statement.
Q25.	a)	Name a cry gene that controls the cotton bollworms and corn borer respectively?
	b)	What are transposons?
	c)	What is a Plasmid?
Q26.	Highlight any four advantages of genetically modified crops?	
Q27.	a)	Describe the responsibility of GEAC, set up by the Indian Government?
	b)	Biopiracy should be prevented. State why and how?
Q28.	List the three molecular diagnostic techniques that help detect pathogens from suspected patients. Mention one advantage of these techniques over conventional methods.	
Q29.	Why does the toxic insecticidal protein secreted by *Bacillus thuringiensis* kill the insect and not the bacterium itself?	
Q30.	a)	Name the nematode that infests and damages tobacco roots.
	b)	How are transgenic tobacco plants produced to solve this problem.
Q31.	a)	How is mature insulin different from proinsulin secreted by pancreas in humans?
	b)	Explain how was human functional insulin produced using r-DNA technology?
	c)	Why is the functional insulin thus produced considered better than the one used earlier by diabetic patients?
Q32.	What is gene therapy? Explain the process of gene therapy to treat adenosine deaminase deficiency. Mention two disadvantages of this procedure. Suggest a permanent cure of this disease.	
Q33.	What are transgenic animals? Mention four purposes for which these animals are produced.	
Q34.	a)	Enumerate the defence mechanisms evolved by prey species to lessen the impact of predation with an example for each.
	b)	List any four adaptive features evolved in parasites enabling them to live successfully on their hosts.
Q35.	Name the interaction in each of the following :	
	a)	Orchid grows on a mango tree
	b)	Cuckoo lays her eggs in the crow's nest.
	c)	Clown fish living among the tentacles of sea anemones.
	d)	*Cuscuta* growing on shoe flower bush
	e)	Species of wasp is found on specific species of fig trees.
	f)	Egrets are often seen along with grazing cattle.
Q36.	a)	How do organisms like fungi, zooplanktons and bears overcome the temporary short lived climatic stressful conditions ? Explain.
	b)	Why are small birds like humming birds not found in polar regions ? Explain.
Q37.	a)	Write the importance of measuring the population size in a habitat or an ecosystem.
	b)	List any four ways of measuring population density of a habitat.
Q38.	a)	Explain with the help of a graph the population growth curve when resources are (i) Limiting and (ii) Not limiting.
	b)	Write the equation for the conditions (i) and (ii)
	c)	Which of the population growth curve is more realistic one and why?
	d)	'Nature has a carrying capacity for a species'. Explain.
Q39.	a)	What is Gause competitive exclusion principle? Explain any two examples.
	b)	Is the Gause competitive exclusion principle always true? Explain.
	c)	Give one mechanism evolved by species facing competition that promotes co-existence rather than exclusion. Explain it by giving on example.

| Q40. | a) Why certain regions have been declared as biodiversity 'hot spots' by environmentalists of the world? Name any two 'hot spot' regions of India. |
| | b) What are sacred groves? Where are sacred groves found in India. Name any two. |
| | c) Which region/ biome in the world is considered as the 'lungs of the planet'? Give two reasons for its degradation. |
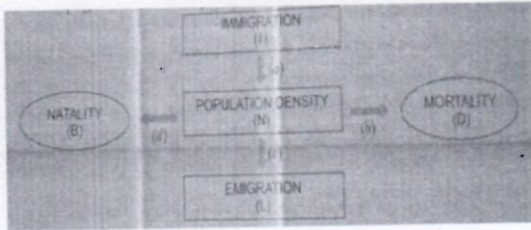
Q41.	a) Which of the above represents the increase or decrease of population?
	b) If 'N' is the population density at time 't', then what would be its density at time (t+1)? Give the formula.
	c) In a barn there were 30 rats. 5 more rats enter the barn and 6 out of the total rats were eaten by the cats. If 8 rats were born during the time period under consideration and 7 rats left the barn, find out the resultant population at time (t+1).
	d) If a new habitat is just being colonized, out of the four factors affecting the population growth, which factor contributes the most?

Q42.	a) Following are the responses of different animals to various abiotic factors. Describe each one with the help of an example
	i) Regulate ii) Conform iii) Migrate iv) Suspend
	b) In a pond there were 20 Hydrilla plants. Through reproduction 10 new Hydrilla plants were added in a year. Calculate the birth rate of a population.

| Q43. | Alien species are highly invasive and are a threat to indigenous species. Substantiate this statement with any three examples. |

| Q44. | Explain, giving one example, how co-extinction is one of the causes of loss of biodiversity. List the three other causes also. |

Q45.	a) What are the two types of desirable approaches to conserve biodiversity? Explain with examples bringing out the differences between the two types.
	b) How is the sixth episode of extinction of species on earth, now presently in progress, different from five earlier episodes What is it due to?
	c) Discuss one example, based on your day-to-day observation, showing how loss of one species may lead to extinction of another.
	d) Why are conventional methods not suitable for the assessment of biodiversity of microbial species.

| Q46. | Write three hypotheses put forth by ecologists explaining the existence of greater biodiversity in tropical regions than in temperat regions. |

| Q47. | a) Why is there a need to conserve biodiversity? |
| | b) Name and explain any two ways that are responsible for the loss of biodiversity. |

Q48.	a) What are Ramsar sites?
	b) Why is genetic variation important in the plant *Rauwolfia vomitoria*?
	c) List any four techniques where the principle of ex- situ conservation of biodiversity has been deployed.
	India has more than 50,000 strains of rice. Mention the level of biodiversity it represents.

Q49.	The graph shown below shows species- area relationship.
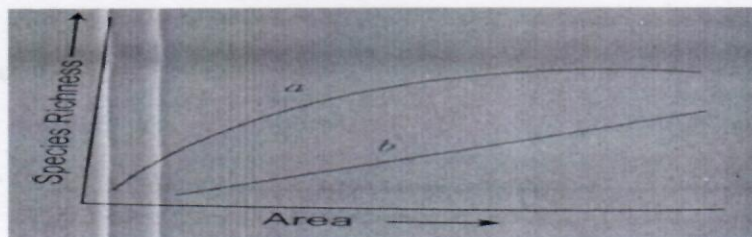
a) If 'b' denotes the relationship on log scale-
   i)   Describe 'a' and 'b'.
   ii)   How is the slope represented? Give the normal range of slope.
   iii) What kind of slope will be observed for frugivorous birds and mammals in a tropical forest?
b) Species diversity of plants (22%) is much less than that of animals (72%). Analyze the reasons for greater diversity of animals as compared to plants.

Q50.	a) Name two International conventions held in relation to biodiversity conservation.
	b)
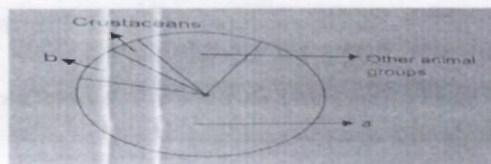
In the pie chart given above, name the unlabelled areas 'a' and 'b' representing the global diversity of invertebrates showing their proportionate number of species of major taxa.
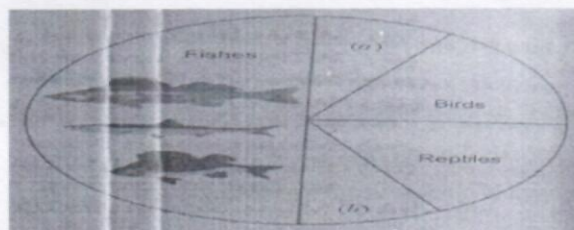
c)

In the pie chart given above, name the unlabelled areas 'a' and 'b' representing the global diversity of vertebrates showing their proportionate number of species of major taxa.
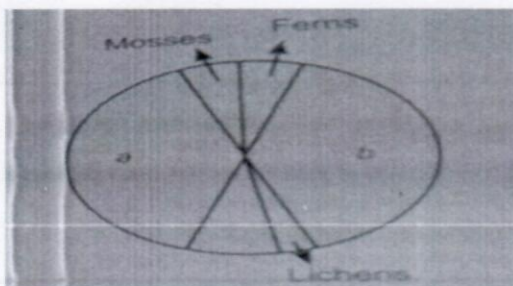
d) In the pie chart given above, name the unlabelled areas 'a' and 'b' representing the global diversity of plants showing thei proportionate number of species of major taxa.

COMPUTER SCIENCE :

Q1. Define the following terms related to DBMS: (i) Attribute (ii) Degree (iii) Cardinality (iv) Primary Key (v) Foreign Key (vi) NULL value

Q2. Expand the following and briefly explain about each :

(i) GPRS (ii) CDMA (iii) GSM (iv) 4G (v) MAC (vi) HTTP (vii) PPP

Q3. Consider the following tables MobileMaster and MobileStock:

MobileMaster

M_Id	M_company	M_name	M_price	M_date
M001	Samsung	Galaxy	5000	2013-02-12
M002	Nokia	N100	3000	2011-04-15
M003	Micromax	Unite3	5000	2017-11-12
M004	Sony	XperiaM	7500	2017-11-13

MobileStock

S_id	M_Id	Qty	Supplier
S01	M001	45	Value Plus
S02	M003	78	
S03	M002	80	Cloud India
S04	M001	90	KVC Ltd.

Write the SQL commands for the following (i) to (iii)

(i) Display the mobile supplier and quantity for all mobiles except for Supplier code "S02"
(ii) Display Mobile company , Mobile name, Supplier and Quantity for each Mobile Id.
(iii) Display the total quantity from mobile stock relation for each Mobile Id.

Q4.Write PushMedals(Medals) and PopMedals(Medals) frunctions in Python to add a new MEDALS in the list of medals of a GAME and remove MEDALS from a list of medals of a GAME, considering these methods to act as PUSH and POP operations of data structure Stack

Q5.Write Insert(teamQ) and Delete(teamQ) functions in python to ad a team name and remove a team name from a queue considering teamQ as a string.

Q6.Sanskar University of Himachal Pradesh is setting up a secured network for its campus at Himachal Pradesh for operating their day to day activities .They are planning to have network connectivity between four buildings

ADMIN	FACULTY	MAIN	FINANCE

The distance between various buildings are given as

Main to Admin	50
Main to Finance	100
Main to Faculty	70
Admin to Finance	50
Finance to Faculty	70
Admin to Faculty	60

No of computers in each building

Main-→ 120 Admin→ 50Finance→ 60Faculty→ 80

Answer the following questions based on the data given above:

(i) Suggest the cable layout between the buildings of the University
(ii) Which building must be used for housing the server
(iii) In which building the switch, repeater and hub should be placed

(iv)   Suggest the cable media to be used for connecting the buildings of University for Internet.

(v)   In which building they would require to install firewall and Modem. State reason

Q7.Consider the table "Product" with the following structure. : P_ID, ProductName, Price.

   Write a python code to delete all the records where the product name starts with the letter "M" or "J"

Q8.Write the advantages and disadvantages of Mesh topology and Star Topology.

Q9.What are the different switching techniques available in networking. Briefly explain about each one of them.

Q10. Differentiate between "having" clause and "where" clause when used with group by. Give an example to demonstrate the same.

HISTORY:

Chapter-13 MAHATMA GANDHI AND THE NATIONALIST MOVEMENT CIVIL DISOBEDIENCE AND BEYOND

Q1. Name one movement launched for farmers and peasants by Mahatma Gandhi inIndia?

Q2. State the significance of Gandhiji`s speech at Banaras Hindu University?

Q3. What is meant by Rowlett Act?

Q4. Why were charkha chosen as a national symbol?

Q5. What was the significance of Lahore Session of Congress?

Q6. Describe the Gandhi –Irwin Pact of 1931?

Q7. What was the attitude of the Indian National Congress towards the second worldwar?

Q8. Why did Gandhiji start Non-cooperation Movement? Why was itwithdrawn?

Q9. Explain the significance of Dandi March?

Q10.What was the problem of separate electorates? What were the disagreement between Congress and Dalits on this issue? Finally what solution to be of this issue?

Q11. How did Gandhiji transform National Movement into mass movement?

Q12. Explain the sources from which we can reconstruct the political career of Mahatma.

Q.13. "Where ever Gandhiji went, rumors spread of his miraculous power." Explain with Examples.

Q.14 Source based questions: Read the following passage and answer the questions given below:

Why the salt satyagraha?

Why was salt the symbol of protest? This is what Mahatma Gandhi wrote:

The volume of information being gained daily shows how wickedly the salt tax has been designed. In order to prevent the use of salt that has not paid the tax which is at times even? fourteen times its value, the Government destroys the salt it cannot sell profitably. Thus it taxes the nation's vital necessity; it prevents the public from manufacturing it and destroys what nature manufactures without effort. No adjective is strong enough for characterizing this wicked dog-in-the-manager policy. From various sources I hear tales of such wanton destruction of the nation's property in all parts of India. Maunds if not tons of salt are said to be destroyed on the Konkan coast. The same tale comes from Dandi. Wherever there is likelihood of natural salt being taken away by the people living in the neighborhood areas for their personal use, salt officers are posted for the sole purpose of carrying on destruction. Thus valuable national property is destroyed at national expense and salt taken out of the mouths of the people.The salt monopoly is thus a fourfold curse. It deprives the people of a valuable easy village industry, involves wanton destruction of property that nation produces in abundance, the destruction itself means more national expenditure, and fourthly, to crown his folly, and unheard-of takes of more than 1,000 per cent is exacted from a starving people.

This tax has remained so long because of the apathy of the general public. Now that it is sufficiently roused, the tax has to go. How soon it will be abolished depends upon the strength the people.

   Q1- Why was salt the symbol of protest?

   Q2- Why was salt destroyed by the Colonial Government?

   Q3- Why did Mahatma Gandhi consider the salt tax more oppressive than other taxes?

CHAPTER- 15 FRAMING THE CONSTITUTION THE BEGINNING OF A NEW ERA

Q1. Who did move the crucial 'Objectives Resolution?

Q2. Why was the new constitution of Independent India introduced on 26 January 1950?

Q3. Which were the two main dissents of the Indian Constitution?

Q4. When was the Drafting Committee formed? Who was its chairman?

Q5. When and under which scheme the Constituent Assembly was formed?

Q6. When and under whose Presidentship the first session of all India States People's Conference was held?

Q7. Why did Mahatma Gandhi think Hindustani should be the National language?

Q8. Why is the Indian constitution acceptable to the Indian people even today?

Q.9. How was the term minority defined by different groups?

Q 10. What was the 'language controversy, before the Constitution Assembly and how did it seek to resolve the controversy?

Q.11 What was the Objectives Resolution? What were the ideals expressed in the Objectives Resolution?

Q 12. **SOURCE BASED QUESTIONS:**

Read the given passage carefully and answer the Questions that follow – "Govind Ballabh Pant argued that in order to become a loyal citizen. People had focused only on the community and the self. For the success of Democracy, one must train himself in the art of self– discipline. In democracies one should care less for himself and more for others. There cannot be any divided loyalty. All loyalties must exclusively be centered round the State. If in a democracy, you create rival loyalties, or you create a system in which any individual or group, instead of suppressing his extravagance, cares naught for larger or other interests, then democracy is doomed."

   a)   Give three attributes of a loyal citizen in a democracy according to G. B. Pant.
   b)   What do you understand by 'Separate Electorate'?

Q13. Why was the demand for Separate Electorate made during the drafting of the Constitution? Q4. Why was G. B. Pant against this demand? Give two reasons.

POLITICAL SCIENCE :

Q1.Analyse the two political developments of 1940s that led to the decision for the creation of Pakistan.
Q2.Suggest any two measures to have good relations with Pakistan.
Q3.State any two reasons for the instability of democracy inPakistan.
Q4.Before 1971, which two reasons were a source of resentment among the people of East Pakistan (now Bangladesh) against West Pakistan?
Q5.What were the two main consequences of Indo-Pakistan conflict of 1971?
Q6.Explain any two common features relevant to the countries of South Asia.

4 Marks Questions

Q1.'Democracy is becoming the first choice of the people of South Asia'. Justify the statement.

OR

'Despite the mixed record of democratic experience, the people of all the countries of South Asia share the aspirations of democracy.' Explain.

Q2. Explain any two points of conflict between India andBangladesh.

OR

   Highlight any four issues of tension between India and Bangladesh.

OR

   Highlight any two issues of cooperation as well as confrontation each between India and Bangladesh .

Q3.Explain any two reasons for the popular struggle in East Pakistan (now Bangladesh) against West Pakistan during 1971.
Q4.Explain any four causes of ethnic conflict in Sri Lanka.
Q5.How is democratisation going on in Nepal since 1990?
Q6.What does SAARC stand for? Highlight it's any three main objectives.
Q7.Explain any two factors responsible for Pakistan's failure in building a stable democracy.
Q8.Explain India's changing relationship with Pakistan.
Q9.Name the countries included in South Asia. How can peace and cooperation be enhanced in this region?

OR

What is meant by SAARC? How can peace and cooperation be enhanced through it? Delhi 2010

8 Marks Questions

Q1."Nepal and India enjoy a very special relationship that has very few parallels in the world". Justify the statement with any three suitable arguments.
Q2.Assess the positive and negative aspects of India's relations with Bangladesh. (Delhi 2015)
Q3.Like India, why could democracy not take roots in Pakistan despite the fact that both the countries share a common past?

OR

Explain the factors responsible for Pakistan's failure in building a stable democracy. Describe any two pro-democracy factors present in Pakistan which can pave the way for establishing a lasting democratic set up over there.
Q4.What are the major differences between the SEC and the European Union as alternative centres of power?

GEOGRAPHY:

Q1) Discuss the major trends of modern industrial activities especially in the developed countries of the world.
Q2) Explain why high-tech industries in many countries are being attracted to the peripheral areas of major metropolitan centres.
Q3) Explain with examples the significance of service sector in modern economic development of the world.
Q4) Explain why high-tech industries in many countries are being attracted to the peripheral areas of major metropolitan centres.
Q5) Name the principal mode of transportation in the world which is used for carrying liquid and gaseous materials only. Mention any four characteristics of this mode of transportation.
Q6) What are the modes by which cyber space will expand the contemporary economic and social space of humans?
Q7) Explain the significance of each of the transport and communication services available in the world.
Q8) Give five points to distinguish between metallic minerals and non-metallic minerals.
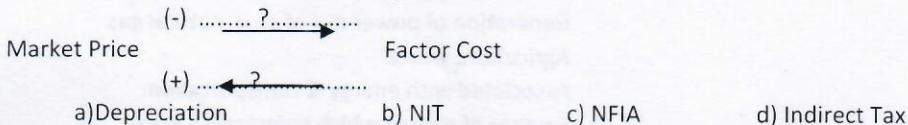Q9) What is the use of manganese? Describe the statewise distribution of manganese in India.

Q10) Which are the two main ferrous minerals found in India? Describe four characteristics of each.

Q11) "Hill Area Development Programmes in India were drawn keeping in view their topographical, ecological, social and economic conditions." Support this statement with suitable explanation.

Q12) "The restoration of ecological balance between water, soil, plants, human and animal population should be a basic consideration in the strategy of development of 'drought-prone area in India." Explain this statement with suitable facts.

Q13) Suggest the measures of promotion of sustainability in Indira Gandhi Canal Command Area.

Q14) Describe the nature of water pollution in India.

Q15) Describe the major sources of air pollution.

Q16) Suggest measures for reduction of land pollution in the country.

Q17) Describe the nature of water pollution in India.

Q18) Define the term Road Density. Explain with examples the two main determinants of road density in India.

Q19) How are waterways an important mode of transport in India? Explain two main characteristics each of inland waterways and oceanic waterways of India.

Q20) Examine the importance of radio and television in mass communication.

Q21) Describe the uses of satellites and computers in the present day life.

Q22) What is the importance of satellite system? Describe in brief the two groups of satellite system used in India.

ECONOMICS:

UNIT- 1   NATIONAL INCOME & ACCOUNTING   TEACHER- ADK

Q1. ....is not a flow variable.   (National Income /National wealth)

Q2. ....is not a factor income: (Rent/ Wages/Gift from abroad)

Q3. Stock variable is defined as ....

Q4. Losses are classified as :   a)Stock   b) Flow   c) a & b   d) Neither a & b

Q5. Wealth is ....variable :   (Stock/ flow)

Q6. Which of the following is covered under domestic territory of India?

a)SBI in London   b) Google office in India   c) Office of Tata Motors in Australia   d) Russian Embassy in India

Q7. Which of the following constitute the reason for difference between Market Price and Factor Cost :

a)Indirect Tax   b) Subsidies   c) Both a & b   d) Neither a & b

Q8. Final goods can be used either for ....and ....

a)   Consumption, investment b) Investment, resale c) resale, investment   d) resale, further production

Q9. Compute $GNP_{(MP)}$ if $GNP_{(FC)}$ = 3000 Net factor income to abroad= 200, Indirect Taxes = 420 subsidies = 240 :

a)3,380   b) 2,980   c) 3,020   d)2,620

Q10. GNP exceeds NNP by :

a)Amount of total taxes b) Government expenditure c) Transfer Payments d) Difference between gross & net investment

Q11. If economic subsidies are added to and indirect taxes are subtracted from the national income at market prices, then it will be :

a)   Domestic income   b) national income c) gross national product at market prices d) gross domestic product at factor cost

Q12. Unforeseen obsolescence of fixed capital assets during production is :

a)consumption of fixed capital   b) capital loss   c) income loss   d) none

Q13. Refrigerator purchased by a confectionary shop is an example of : a)final good   b) intermediate good   c) capital good   d) both a & c

Q14. Which of the following is correct :

a)   Read GDP = $\dfrac{PI}{NominalGDP}$ x100

b)   Read GDP = $\dfrac{NominalGDP}{PI}$ x 100

c)   Nominal GDP = $\dfrac{RealGDP}{PI}$ x 100

d)   Nominal GDP = $\dfrac{PI}{RealGDP}$ x100

Q15. Value added by a firm is equal to : a)sales   b) profits   c) sales- intermediate consumption   d) sales + intermediate consumption

Q16. Which of the following will be included in National Income :

a)   sale of bonds by a company   b) transport expenses by firm c) Interest on loan paid by household   d) None

Q17. Commodity service method is other name for :

a)Expenditure method   b) Value added method   c) Income method

Q18. If $NDP_{(FC)}$= 1500 Net factor income to abroad = 500 then $NNP_{(FC)}$ will be : a)2,000   b) 1,500 c) 1,000   d)2,500

Q19. Distributed profit is also known as :   a)Corporate Tax   b) Retained earnings   c) Dividend

Q20. Define real flow.

Q21. Depreciation means.......................

Q22. Addition in capital stock is termed as.............

Q23. ....aggregate represents National Income.

Q24. When will GDP of an economy be equal to GNP?

Q25. Why is $GDP_{(Fc)}$ greater than $NDP_{(FC)}$.

Q26. When will domestic income exceeds national income?

Q27. Define national income.

Q28. Gross investment is also known as: ....

Q29. Define intermediate consumption.

Q30. Give one example of 'externality' that reduces public welfare.

Q31.Why Leisure is not included in GNP?

Q32. How can problem of Double counting to be avoided?

Q33. With a rise in real income welfare of the people ....(rises/ falls/ remains unchanged)

Q34. Identify the missing item in the given chart :

        (-) .... ?.............

Market Price   Factor Cost

        (+) ....◄......?............

    a)Depreciation   b) NIT   c) NFIA   d) Indirect Tax

UNIT- 3 DETERMINATION OF INCOME & EMPLOYMENT

Q1. ....is exercised through discussions letter and speeches to bank :

    a)moral suasion   b) selective credit control   c) Margin requirements   d) open market operations

Q2. Change in government spending is a part of ....(Fiscal policy/Monetary policy)

Q3. Monetary Policy is the policy of ....to control money supply and credit creation in the economy (Central government/Central Bank)

Q4. AD curve is represented by...............curve in the income : a)C+S+I   b) C+S   c) S+I   d) C+I

Q5. Multiplier is.........related to MPC :   a)directly   b) indirectly   c) rarely   d) None

Q 6. If saving function of an economy is given as S = -40+ 0.4y then MPC is : ......a)1   b) 0.4   c) 0.6   d) None

Q7. If MPS = 0 the value of multiplier is :   a)K = 0   b) K =1   c) K = =∞   d) K= 2

Q8. When AD>AS, inventories :   a)fall   b)rise   c) do not change   d) first

Q9. If C = 20 + 0.8Y and investment expenditure is Rs 50 corres, then equilibrium income is :

    a)Rs 400crores   b) Rs 350 crores   c) Rs 200 crores   d) Rs 1000 crores

Q10. MPC = 0.75, and as a result of multiplier effect National Income increased by Rs 300 crores by an additional investment of

    a)Rs 400 crores   b) Rs 225 crores   c) Rs 1200 crores   d) Rs 75crores

Q11. Which of the following expression is correct ?

    a)$K = \dfrac{\Delta Y}{\Delta I}$ b) $K = \dfrac{1}{MPS-1}$ c) $K = \dfrac{1}{MPC}$ d) $K = \dfrac{\Delta I}{\Delta Y}$

Q12. Out of the following which can have value more than one ?   a)MPC   b) APC   c) APS   d) MPS

Q13. ....refers to actual savings in an economy during a year : (Ex ante savings/ Ex post savings) Q14. If C = 100 + 0.75Y then saving function will be expressed as :   a)S = 100 + 0.25Y   b) S = -100 + 0.75Y   c) S = -100 + 0.25Y   d) S = 75 + 0.25Y

Q15. AD curve starts from : a)From the origin   b) Point below the origin   c) Point above the origin   d) None

Q16. What is the impact of decrease in margin requirement on money supply?

Q17. State two measures used by central bank to control inflationary gap.

Q18. The maximum value of multiplier is............when the value of MPC is.............

Q19. What is under employment equilibrium?

Q20. What is the relationship of MPS and K?

Q21. If investment falls to zero, the national income will also be zero. (true/ false) Give reason.

Q22. How can value of APC be greater than one?

Q23. Can APC be zero? Give reason.

Q24. Give the meaning of involuntary unemployment.

Q25. When AD> AS, inventories :   a)Fall   b) Rise   c) To not change   d) First fall then rise

Q26. When economy decides to save the whole of its additional income, the value of multiplier will be ....

Q27. If MPC is 0.6 the value of multiplier will be ....

Q28. If MPC = MPS, then value of K = ?

Q29. Can value of MPC > 1? Give reason.

Q30. What is the relationship between MPC and MPS?

Q31. Give the meaning of full employment.

Q32. Define Aggregate Supply.

UNIT- 7   CURRENT CHALLENGES FACING INDIAN ECONOMY

Q1. Define worker- population ratio.

Q2 Why is self employed work force higher in rural areas?

Q3. Out of these which is a worker :   a)Beggar   b) Thief   c) Cobbler   d) Gambler

Q4. Unemployment arising from economic fluctuation is called ....

Q5. Define non- institutional sources of rural credit.

Q6. Fertilizers restore crop health not the soil health. State true or false with reason.

Q7. Why do farmers need credit?

Q8. Which is the apex institution in rural financing?

Q9. Name the state which is held as a success story in the efficient implementation of milk- co-operatives.

Q10. Give any one limitation of organic farming.

Q11. Define 'Golden Revolution'.

Q12. What is meant by seasonal unemployment?

Q13. Define disguised unemployment.

Q14. What is meant by open unemployment?

Q15. Match A item with suitable statements under B.

A	B
a) Economic Infrastructure	Associated with education and health
b) Commercial Energy	Generation of power out of coal, natural gas
c) Non commercial energy	Agriculture waste
d) Social Infrastructure	Associated with energy & transportation
e) Thermal Power	Sources of energy which command a price

Q16. Define Infrastructure.

Q17. Which of the following is a renewable source of energy? a)Solar energy   b) Wind energy   c) Both a & b   d) Neither a or b

Q18. ISM stands for....................

Q19. Power generated from water is called : a)Thermal power   b) Hydro electric power   c) Atomic power   d) Tidal Power

Q20. What is Global Warming?

Q21. What is the 'Dichotomy' posed by India's environmental problems?

Q22. Define 'Carrying capacity of the environment'.

Q23. What was the main objective of the Environment Protection Act 1986.

Q24. Which one of the following is the cause of land degradation?
   a) Loss of vegetation due to deforestation   b) Overgrazing c) Encroachment into forest lands   d) All of these

Q25. Give the meaning of renewable resources.

Q26. Why have some resources become extinct?

Q27. Which of the following is an important function of environment.
   a) To provide resources for production   b) To provide aesthetic services   c) to assimilate waste   d) All of these

Q28. What do you mean biotic elements?

Q29. Mention any one measure to control air pollution in vehicles.

Q30. India's energy policy encourages the following two energy sources :
   a) Hydel and thermal power   b) Wind and thermal power   c) Hydel and wind   d) Thermal and nuclear power

Q73. What is morbidity?

Q31. How can transmission and distribution losses be reduced?

Q32. List out the six systems of Indian Medicine.

Q33. Which primary source of energy has the largest share in the energy consumption?

Q34. In the year.................Indian Government made free and compulsory education for age group of 6-14 years.

Q35. What do the differences in male and female literacy rates in India indicate?

Q36. Give the meaning of human capital.

Q37. What is Brain Drain?

Q38. Why have self help groups been set up?

Q39. What type of fuels are used by Rural Women in India to meet their energy requirement?

Q40. Mention one advantage of Infrastructure.

Q41. What accounts for the largest part of our electricity generation?

Q42. What is 'Global Burden of Disease'?

Q43. List any two measures of sustainable development.

Q44. Define Sustainable development.

Q45. What is Labour Supply?

Q46. What is Labour Force?

Q47. How do industries pollute the environment?

UNIT- 8   COMPARATIVE DEVELOPMENT EXPERIENCE OF INDIA AND ITS NEIGHBOURS (INDIA, CHINA & PAKISTAN)

Q1. When were reforms introduced in all 3 economics?

Q2. Name the programme started in China with the aim of industrialization?

Q3. Name two Indicators of HDI.

Q4. What was the major reason for the low population growth of China?

Q5. What are Liberty indicators?

Q6. Great Proletarian cultural revolution had what objective?

Q7. What was 'Dual Pricing' in reforms initiated in China?

Q8. Define 'Statism'.

Q9. Mention some examples of regional and economic groupings.

Q10. Which sector of the economy contributes the highest to India's GDP :   a)Service   b) Industry   c) Agriculture

Q11. Between India and China which country has the higher HDI.

Q12. Which country has the highest life expectancy – India, China or Pakistan?

Q13. Why has China's growth rate slowed in the past few years?

Q14. What does the comparison of India's population density with China's population density indicate?

Q15. Give any one reason for the slowdown of growth and re-emergence of poverty in Pakistan's economy.

Q16. First five year plan of...............commenced in the year 1956 (Pakistan/ China)

Q17. Urbanization is higher in................as compared to India (China/ Pakistan)

Q18. India, Pakistan and ....have many similarities in their development strategies.

Q19. Maternal mortality rate is high in................(China/ Pakistan) Q20. Why was special economic zone set up in China?

Q21. Which sector of the economy contributes the highest to China's GDP?

Q22. What is Commune System of Farming?

Q23. Identify two areas of human development where Pakistan has stopped?

Q24. Between India and China which country has the highest value of human development Index?

Q25.Which one of the following is in Indicator of Human Development?

    a) Life Expectancy at birth   b) Maternal Mortality rate   c) Infant Mortality rate   d) All of these

Q26. Which type of economic system is followed in Pakistan?

ACCOUNTS : Prepare Specific Project an any company financial statement include : * Cash flow Statement   * Ratio Analysis

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PSYCHOLOGY: All questions carry 6 marks each

1. Explain the relationship between culture and intelligence with examples.
2. What is the relationship of creativity with intelligence?
3. Explain in detail any 1 of the approaches to personality that appeals to you the most? Why do you find this theory interesting?
4. What are defense mechanisms? Explain any 5 defense mechanisms with examples.
5. Write about the effects of stress on psychological functioning and health
6. What is examination anxiety? Have you ever experienced it? How do you usually cope with it?
7. Explain in detail any 3 stress management techniques
8. Choose a character from any book/ movie/ TV series which exhibits symptoms of a psychological disorder. Explain their signs and symptoms in detail and suggest a therapy technique for them.
9. Write in detail about any 1 type of therapy that interests you the most.
10. Write about the factors that influence attitude formation. How has these factors shaped your personal lives?

PHYSICAL EDUCATION :

        1. Make a detailed project on various Life Style diseases and various Asanans should be mentioned for the avbove:
           * Diabetes   * Hypertension   * Asjhama   * Obesity
        Also mention the contraindications for all asanas along with procedure and benefitcs of Asanas.

BUSINESS STUDIES :

STAFFING

Q1. XYZ Ltd. is setting up a new plant for manufacturing jute bags. For its new plant it needs highly trained and motivated work force. To recruit competent middle level officials, HR manager of XYZ Ltd. went to different colleges and universities and to recruit lower level workforce he puts a notice on the gate of company about the requirements of the firm. Identify and explain the sources of recruitment referred in the above paragraph.

Q2. A company wants to expand its business and for this purpose company is preparing database of its prospective employees. So whenever it gets application from any applicant, HR manager tells them that as and when company required his/her services, he will be called. Its advantage is that at the time of need, a suitable applicant out of the database can be called for interview. In this way company can save its expenses on advertisement and can save time also.

   a) Identify and explain the source of recruitment referred in above paragraph.

   b) State any two merits and demerits of this source.

Q3. The workers of a factory are unable to work on new machines and frequent accidents occur while working. Their wastage rate and labour turnover rate is much higher than otherfactories. They always demand or help of supervisor. Suggest the remedy with proper advantages.

Q4. Explain the procedure for selection of employees.

Q5. Moga Industries Ltd. Approached a well-established university in the city of Madurai to recruit qualified personnel for various technical and professional jobs. They selected Tanya, Ritu, Garima and Chetan for various vacancies in the organisation. After the selection and placement, "Moga Industries Ltd." felt the need to increase the skills and abilities, and the development of a positive attitude of the employees to perform their specific jobs better. The company also realised that learning new skills would improve the job performance of the employees. Hence, the company decided to take action for the. same.

   i)   Name the step of the staffing process regarding which the company decided to take action.

   ii)   State the benefits of the action to "Moga Industries Ltd."

DIRECTING

Q1. "Managerial functions cannot be carried out without an efficient system of communication^^. Do you agree with this statement? Give

any five reasons in support of your answer.

Q2. Describe the role of motivation in directing function of management.

Q3. Roshan is the chief chef of 'Khidmat' restaurant located in the city of Bangaluru. The place is known for its exquisite Mughlai cuisine especially mutton biryani and kababs. All the food is prepared under Roshan's purview. The various activities in the kitchen are initiated in accordance with his instructions. He is very clear and specific in issuing instructions to his subordinates in order to ensure the smooth working of the department. He personally oversees the method followed by the chefs for the preparation of each dish. He misses no opportunity to praise his subordinates for their good work. All his team members feel very happy and satisfied under his direction. He provides constant guidance to them in order to improve upon its taste and presentation and also encourages them to innovate and be more creative in their work.

In the above context:

i) Identify the various elements of directing mentioned in the above paragraph by quoting lines from the paragraph.

ii. Describe briefly any two points to highlight the importance of directing as a function of management.

4. The Chief Executive Officer- CEO of Bharat Textile Limited, Mr. Om Sahukar had gone to attend, the marriage of one of his friend's daughter. There, he happened to meet an old friend of his, Mr. Ram Tripathi, who was posted as Marketing Manager in another Textile Company. Both of them began chatting. While doing so, they came to a stage when they started sharing the secret information of their respective companies. Mr. Tripathi told Mr. Sahukar that some of the big customers of the latter's company were getting associated with the former's company. All of them were unhappy with the treatment given to them by the latter's company. Mr. Sahukar made a note of this fact. No sooner did he reach his office than he called his P.A. and asked him to arrange an urgent meeting of all the big customers of the company. Mr. Sahukar explained to his P.A. the detailed message to be sent to the customers. The P.A. prepared a brief form of the message and e-mailed it to all the big customers. Very soon, the acknowledgements of the message from the customers and the information about their attendance at the meeting started reaching the company's office. Between which people the Formal and Informal Communication is taking place in the above paragraph?

i) Identify the different stages of the communication process along with some clues.

ii) Which value has been destroyed here?

5. Mohan and Madan are friends working in Surya Ltd. as production and sales manager, respectively. In a social gathering, Sohan informed Mohan about a change in the marketing policy of the company.

i) Identify the type (formal/informal) of communication used in the above example,

ii) List names of any three networks of the type of communication identified in part (i).

CONTROLLING

Q1. ABC Ltd. is engaged in manufacturing readymade garments. The target production is 500 shirts per day. The company has been successfully attaining this targets until last three months. The actual production has been varying between 400-450 shirts. Which management function is needed to rectify the situation? Write any two features associated with it.

Q2. There are two managers Mr. X and Mr. Y. They both have different point of views. Mr. X says that "controlling is backward looking" while Mr. Y contradicts by saying that "controlling is forward looking". Who do you think is right? Give reason.

Q3. Which two steps in the process of control are concerned with ensuring events to confirm to plan? Explain.

Q4. Which feature of controlling does it refer to when it is said that 'Controlling is exercised at all levels of management'? Explain.

Q5. Mr Arfaaz had been heading the production department of Write well Products Ltd., a firm manufacturing stationary items. The firm secured an export order that had to be completed on a priority basis and production targets were defined for all the employees. One of the workers, Mr Bhanu Prasad, fell short of his daily production target by 10 units for two days consecutively. Mr Arfaaz approached Ms Vasundhara, the CEO of the Company, to file a complaint against Mr Bhanu Prasad and requested her to terminate his services. Explain the principle of management control that Ms Vasundhara should consider while making her decision. (Hint: Management by exception).

Financial Management

Q1. What are the main objectives of financial management? Briefly explain.

Q2. Pranav is engaged in the transport business. Identify the working capital requirements of Pranav stating the reason in support of your answer. Pranav wants to expand and diversify his transport business. Explain any two factors that will affect his fixed capital requirements.

Q3. In the paint industry, various raw materials are mixed in different proportions with petroleum for manufacturing different kinds of paints. One specific raw material is not readily and regularly available to the paint manufacturing companies. Bonier Paints Company is also facing this problem and because of this, there is a time lag between placing the order and the actual receipt of the material. But, once it receives the raw materials, it takes less time ill converting it into finished goods. Identify the factor affecting the working capital requirements of this industry.

Q4. Why is the working capital needed? Give any one reason.

Q5. Explain how the   i) cost of debt and   ii) cost of equity, affect the choice of capital structure.

FINANCIAL MARKETS

Q1. Sika Ltd, a reputed industrial machines manufacturer, needs rupees twenty crores as additional capital to expand the business. Mr. Amit Joshi, the Chief Executive Officer (CEO) of the company wants to raise funds through equity. The Finance Manager, Mr. Narinder Singh, suggested that the shares may be sold to investing public through intermediaries, as the same will be less expensive. Name the method through which the company decided to raise additional capital.

Q2. Mr Vikas Mehra was the Chairman of *IBM Bank*. The bank was earning good profits. Shareholders were happy as the bank was

paying regular dividends. The market price of their shares was also steadily rising. The bank was about to announce the taking over of *UK Bank*. Mr Vikas Mehra knew that the share price of IBM Bank' would rise on this announcement. Being a part of the Bank, he was not allowed to buy shares of the bank. He called one of his rich friends Mukand and asked him to invest Rs4 crores in shares of his bank promising him the capital gains. As expected, after the announcement, the share prices went up by 50% and the market price of Mukand's shares was now Rs6 crores. Mukand earned a profit of Rs2 crores. He gave Rsl crore to Vikas Mehra and kept Rsl crore with him. On regular inspection and by conducting enquiries of the brokers involved, Securities and Exchange Board of India (SEBI) was able to detect irregularity. SEBI imposed a heavy penalty on Vikas Mehra. Quoting the lines from the above para identify and state any two functions performed by SEBI in the above case.

Q3. Harsh works as a manager in a software company. He opened a Demat account with a broking house in order to trade in securities with the money he received as his first performance bonus. Since then he has been very active in stock trading under the guidance of a stockbroker. However, when he was hospitalised for a few days this year, his wife received several calls from his stockbroker for permission to transact on Harsh's behalf. Though she told him to wait until her husband had recovered, the stockbroker went ahead and executed the transactions. When Harsh got home from the hospital, he discovered that the unauthorised transactions had led to a loss for him.

Harsh complamed to the broking house, but they claimed he had authorised the transactions. Keeping in view, the guidelines issued by the National Stock Exchange that he had read in the national newspaper Harsh demanded proof and threatened to file a complaint. Since the broking house had no evidence that the deals had been authorised they made good the loss that Harsh had incurred due to the transactions. In.the context of the above case:

i) What is a Demat account?
ii) Who is acting as the depository participant for Harsh?
iii) Name the document that is legally enforceable and helps to settle the claims between the investor and the broker.

Q4. Raheja Softwares Ltd. is a well-known name in the market for the last ten years. Now, it wants to set up new projects for the expansion and modernisation of existing projects. For this purpose, it is opting for two different methods of floating new issues. Firstly, securities are sold to issuing houses or stockbrokers at an agreed price which they resell to the investing public. Secondly, one share is offered against five shares (which shareholders already possess) to the existing shareholders. This is a privilege given to them.

I) In which type of capital market the above issue of securities is covered?
II) Write the name of the methods used for issue of securities by Raheja Softwares Ltd.
III) List any two investors in this market.

Q5. The electronic book-entry form of holding and transferring securities has eliminated the problems of theft and forgery. Discuss the concept indicated in the given statement.

FINANCIAL MARKET

Q1. The directors of a newly established company having a paid up equity share capital of Rs 25 crores, desire to get its shares traded at an all India level stock exchange. As finance manager of the company, suggest the name of the stock exchange for the purpose. Give any 3 reasons in support of your answer.

Q2. The director of a company want to modernize its plants and machinery by making a public issue of Shares. They wish to approach stock exchange, while the finance manager prefers to approach a consultant for the new public issue of shares. Advice the directors whether to approach stock exchange ro a consultant for new public issue of shares and why? Also advise about the different methods which the company may adopt for the new public issue of shares

Q3. The director of a newly established company having paid up equity share capital of 25 crores desire to get its shares traded at all India Level Stock exchange. As finance Manager of the company, Suggest the name of stock exchange for the purpose. Give any 3 reasons in support of your answer

Q4. "Securities and exchange Board of India (SEBI) is the watchdog of the securities market." Do you agree ? Give four reasons in support of your answer.

Q5. What is the settlement cycle in NSE.

CONSUMER PROTECTION

Q1. Explain in brief any six functions of consumer organizations in the area of consumer protection.
Q2. Explain briefly the meaning of "consumer" with reference to Consumer Protection Act 1986 .
Q3. Giving any six points, explain the need/importance for consumer protection? OR Why is consumer protection needed in India ?
Q4. What type of judicial machinery is there to deal with consumer grievances and disputes?
Q5. Explain in brief any six rights of consumers as provided under the Consumer Protection Act, 1986

MUSIC (TABLA)   1. Make the assignment of the following topics in Project file :
    a) Comparative study of the following :

i) Chartaal	-	Ektaal
ii) Jhaptaal	-	Sooltaal
iii) Teentaal	-	Tilwada Taal

    b) Gharana of table :
       i) Delhi Gharana
       ii) Lucknow Gharana
       iii) Ajrada Gharana

iv) Banaras Gharana

v) Punjab Gharana

c) Write the autobiography of the following :

i) Pandit RajaChatrapati Singh

ii) Pandit Pagal Das

2. Brief History of medieval and modern period of Hindustani Music.

MUSIC (VOCAL)

1. Define the following Terms : Gram, Moorchhana, Kan, Khatka & Murki.

2. Write about the Tuning of Tanpura.

3. Write down the following Taals' with Ekgun, Dugun , Tigun & Chaugun Laykari -:

    Dhamar Taal , Roopak Taal, Chautaal, Jhaptaal, Teental, Dadra, Keherwa, Ektaal.

4. Give the Life-Sketch of the following :

    * Ustad Bade Ghulam Ali Khan.   * Pt. Krishna Rao Shankar Pandit.   * Ustad Faiyaz Khan.

5. Write the Notation of Chhota Khayal of the Following Ragas : a) Raga Bhairav b) Raga Bageshri c) Raga Malkauns.

    6. Write the following patterns of Alankaars' : a) Ascending Order of Alankaars'.   b) Pyramidal Form of Alankaar.

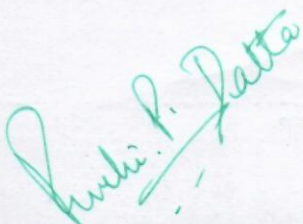**NOTE : Holiday Homework to be done in Project File only.**

PAINTING :

- Make 10 still life in water colour .

    Note : Size- half imperial size (18x24 inches)

    Sheet- Cartridge Sheet (Drawing sheet)

HEAD SENIOR SCHOOL   **PRINCIPAL**   **DOA**

16/12