

# **S.B.P. D.A.V. Centenary Public School, Fatehabad.**

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## **Holidays' Assignments for Summer Vacations (2019-20) for Class XI (Medical)**

### **General Instructions:**

1. *Get up early in the morning and go out for a walk daily. Play some outdoor game to remain fit.*
2. *Learn all the prayers and mantras given in student diary.*
3. *Raise a small kitchen garden by planting seeds.*
4. *The summer break for Nursery to XII will be from May 24, 2019 to July 1, 2019 (Both days inclusive). School will reopen on July 2, 2019.*
5. *Revise the syllabus of all subjects done before summer vacations for Unit Tests to be arranged after summer break.*
6. *Submit home work to your teachers on July 2, 2019.*
7. **Register & Participate in 1<sup>st</sup> stage of 5<sup>th</sup> Online International Humanity Olympiad by accessing through our web portal – [www.humanityolympiad.org](http://www.humanityolympiad.org) or Android App - Awake Humanity (play store). Every individual passing the exam (i.e. scoring minimum 40%) will get an e-certificate through e-mail immediately on their emails. School code is: FATE001**

### **English**

1.Revise syllabus for UT.

Hornbill :L 1to 4 Poems:1&2 Snapshots:-L 1&2

Grammar :-Tenses &Modals| Writing Section :-Notice ,Letter Writing ,Advertisement Writing

2.Write 50 difficult or new words from the text you have read.

**3(A)Make a beautiful Collage for classified advertisements on the following topics-  
(Roll no- 1to20)**

- a. Accommodation Wanted
- b. Bride Groom Wanted
- c. Obituary
- d. In Memoriam
- e. Change of Name
- f. Found- a wallet
- g. Tour &Travel

**(B)Make a beautiful collage with given notices(Roll no-21 to 40.....)**

- a. Seminar on Career Options after 10<sup>th</sup>
- b. Sudden holidays for a week
- c. Donation for flood victims
- d. Selections for schools under 19 football team
- e. Change in school timing
- f. Audition for the selection of play artist for a drama
- g. Inviting entries for the school magazine.

**4.Complete worksheets from BRAVIA in a good handwriting( use pencil)**

- a. Worksheet 1 to 6 (Reading comprehension)
- b. Worksheet 25,26 (Advertisement )
- c. Worksheet 51-55 (Article writing) ,Worksheet 21,22 (Notice Writing)
- d. Worksheet 41, 42 ,43 ,44(Letter writing)

5.Exercise 1-5 tenses on pages 241 ,242

6.Write the review of any motivational book you read in summer breaks in 100-150 words..

7 Do first three listening activities of BRAVIA.

## Physics

- Do all the NCERT Exemplar questions of chapters completed in class
- Investigatory Project Report to be made on the topics allotted in class.
- Do following assignment in your holidays' homework notebook.

### SUBJECTIVE QUESTIONS

1. Write the characteristics of a standard unit.
2. Write difference between fundamental & derived unit with example.
3. Define the term one light year, astronomical unit & Parsec.
4. In the equation  $y = A \sin (wt - kx)$ , obtain the dimensional formula of  $w$  &  $k$ . Given  $x$  is distance &  $t$  is time.
5. Energy & young's modulus have the same dimension comment.
6. The rotational K.E. of a body is given by  $\frac{1}{2} I\omega^2$ . Use this equation to obtain the dimension of  $I$ . Where  $I$  = Moment of inertia,  $\omega$  = angular velocity.
7. The value of Stefan's constant is  $\sigma = 5.67 \times 10^{-8} \text{ J/S / m}^2 / \text{K}^4$ . Find its value in cgs system.
8. How much larger than microsecond is a millisecond?
9. Why S.I is called rational system of units?
10. Find an expression for the maximum error when a physical quantity depends upon the product of two physical quantities.
11. What is the difference between AU & A°?
12. What is random error? Explain with an example how this error can be estimated.
13. Explain law of conservation of linear momentum with example.
14. Explain law of conservation of angular momentum with example.
15. Why S.I is called coherent system of units?
16. Pressure may be defined as the linear momentum per unit volume. Is it correct? Check by the method of dimensions.
17. Express one Parsec in terms of light year.
18. Write the difference between gravitational force, electromagnetic force, nuclear (strong & weak).
19. Write difference between fundamental & derived unit with example.
20. Define the term one light year, astronomical unit & Parsec.
21. What is absolute error? How is it calculated mathematically?
22. Find an expression for the maximum error when a physical quantity depends upon the powers of two physical quantities.
23. Distinguish between accuracy and precision.
24. Draw velocity-time graph for the motion of a body moving with uniform positive acceleration.
25. Draw velocity-time graph for the motion of a body moving with uniform negative acceleration.
26. Describe in each case whether the motion is one, two or three dimensional
  - a. a moving car on a straight highway.
  - b. a piece of paper flying in air.
  - c. the earth revolving around the sun.
27. Distinguish between distance and displacement.
28. Can a body be said to be rest as well as in motion at the same time? Explain.
29. Distinguish between speed and velocity.
30. What is a velocity-time graph? Mention its use?
31. What do you understand by the non uniform motion? Explain variable velocity and instantaneous velocity of an object in one dimensional motion.
32. What do slopes of position – time & velocity time graph of uniform accelerated motion represent?
33. Show that area under velocity time graph of a particle in uniform motion gives the displacement of the particle in given time.

34. Show that slope of displacement time graph is equal to velocity of uniform motion.

35. Derive the relation:-

$$S = ut + \frac{1}{2} at^2$$

### Numericals

1. Subtract with due regard to significant figures :-

$$3.9 \times 10^5 - 2.5 \times 10^4.$$

2. A potential difference of  $V = 100 \pm 2$  volt, when applied across a resistance  $R$  gives a current of  $10 \pm 0.5$  ampere. Calculate percentage error in  $R$  given by  $R = V/I$ .

3. Assuming that the frequency ( $\nu$ ) of a vibrating string depends upon the load ( $F$ ) applied,

length of the string ( $l$ ) and mass per unit length ( $m$ ), prove that  $\nu = \frac{1}{2l} \sqrt{\frac{F}{m}}$ .

4. Write the dimensions of  $a/b$  in the relation

$$P = \frac{b - x^2}{at^3}, \text{ where } P \text{ is pressure } x \text{ is distance } t \text{ is time.}$$

5. In an experiment, the value of refractive index of glass was found to be 1.54, 1.53, 1.44, 1.54, 1.56 and 1.45 in successive measurements. Calculate (i) mean value of refractive index. (ii) Absolute error (iii) relative error.

6. In the equation  $y = A \sin (wt - kx)$ , obtain the dimensional formula of  $w$  &  $k$ . Given  $x$  is distance &  $t$  is time.

7. Write the dimensions of  $a/b$  in the relation

$$P = \frac{b - x^2}{at}, \text{ where } P \text{ is pressure } x \text{ is distance } t \text{ is time.}$$

8. If force, velocity & time are taken as fundamental quantities, what would be the dimensions of work.

9. A capacitor of capacitance  $C = (2.0 + 0.1) \mu F$  is charged to a potential  $V = (20 + 0.5)$  volt calculate the charge  $Q$  with error limits.

10. Write down the number of significant figures in the following

i. 52.38 N

ii. 34.000 m

iii. 4200 kg

iv. 0.02340 N/m

11. Subtract  $5.5 \times 10^5$  from  $6.6 \times 10^7$  with due regard to significant figures.

12. A physical quantity  $x$  is calculated from the relation  $x = \frac{a^5 b^3}{c^4 d^{1/2}}$

If percentage error in  $a, b, c, d$  are 1%, 2%, 3%, 5%. What is percentage error in  $X$ .

13. A body travels uniformly a distance of  $(5.6 + 0.5)$  m in a time of  $(3.1 + 0.2)$  sec. calculate percentage error in velocity.

14. Distinguish between accuracy and precision.

15. Derive by the method of dimensions, an expression for the volume of a liquid flowing out per second through a narrow pipe. Assume that the rate of flow of liquid depends on (i) the coefficient of viscosity ' $\eta$ ' of the liquid (ii) the radius ' $r$ ' of the pipe and (iii) the pressure gradient  $[P/L]$  along the pipe.

16. The period of vibration of a tuning fork depends on the length  $L$  of its prong, density  $d$  and Young's modulus  $Y$  of its material. Deduce an expression for the period of vibration on the basis of dimensions.

17. The period of oscillation of a simple pendulum is  $T = 2\pi \sqrt{\frac{L}{g}}$ , Measured value of  $L$  is 20.0 cm known to 1 mm accuracy and time for 100 oscillations of the pendulum is found to be 90 s using a wristwatch of 1 s resolution. What is the accuracy in the determination of  $g$ ?

18. For the estimation of Young's modulus  $Y = \frac{4mgL}{\pi d^3 l}$  for the specimen of wire, following observations were recorded  $L = 2.890$ ,  $M = 3.00$ ,  $d = 0.082$ ,  $g = 9.81$ ,  $l = 0.087$ . Calculate the maximum percentage error in the value of  $Y$  and mention which physical quantity causes maximum error.

19. If two resistors of resistances  $R_1 = (4 \pm 0.5) \Omega$  and  $R_2 = (16 \pm 0.5) \Omega$  are connected (i) in series and (ii) in parallel; find the equivalent resistance in each case with limits of percentage errors.

20. The SI unit of energy is  $J = \text{kg m}^2\text{s}^{-2}$ , that of speed  $v$  is  $\text{ms}^{-1}$  and of acceleration  $a$  is  $\text{ms}^{-2}$ . Which of the formulae for kinetic energy (K) given below can you rule out on the basis of dimensional arguments ( $m$  stands for the mass of the body).
- a.  $K = m^2v^3$    b.  $K = \frac{1}{2}mv^2$    c.  $K = ma$    d.  $K = \frac{3}{16}mv^2$    e.  $K = \frac{1}{2}mv^2 + ma$
21. The escape velocity from the surface of earth is given by  $v = \sqrt{\frac{2GM}{R}}$ , where  $M$  is mass and  $R$  is radius of earth. Check the correctness of the formulae.
22. Check by the method of dimensions, the formula  $v = \frac{1}{\lambda} \sqrt{\frac{K}{d}}$ , where  $v$  is velocity of longitudinal waves,  $\lambda$  is wavelength of wave,  $K$  is coefficient of volume elasticity and  $d$  is density of the medium.
23. Two roads have lengths measured as  $(1.8 \pm 0.2)$  m and  $(2.3 \pm 0.1)$  m. Calculate their combined length with in error limits.
24. A potential difference of  $V = (20 \pm 1)$  volt is applied across a resistance of  $(8 \pm 2)$  ohm. Calculate the current with error limits.
25. The radius of a sphere is measured to be  $(2.1 \pm 0.5)$  cm. Calculate its surface area with error limits.
26. A physical quantity  $x$  is calculated from  $x = \frac{ab^2}{\sqrt{c}}$ . Calculate % error in  $x$ , when % error in measuring  $a, b, c$  are 4, 2 and 3 respectively.
27. Assuming that the mass  $m$  of the largest stone that can be moved by a flowing river depends upon  $v$  (the velocity),  $d$  (the density water) and on  $g$  (the acceleration due to gravity), show that  $m$  varies with sixth power of the velocity of flow.
28. Show dimensionally that the centripetal force, acting on a particle of mass  $m$ , moving in a circle of radius  $r$  with a uniform speed  $v$  rotations per seconds is  $4\pi^2 v^2 mr$ .
29. A gas bubble from an explosion under water, oscillates with a period  $T$  proportional to  $P^a \rho^b E^c$  where  $P$  is the static pressure,  $\rho$  is the density of water and  $E$  is the total energy of the explosion. Find the values of  $a, b$  and  $c$ .

### Multiple choice Questions

- What is the % error in measurement of time period 'T' of a pendulum if maximum error in the measurement of 'l' & 'g' are 2% & 4% respectively? (when  $T = 2\pi \sqrt{\frac{l}{g}}$ )
  - 6%
  - 3%
  - 4%
  - 5%
- The length of rod is  $(11.05 \pm 0.05)$  cm. What is the total length of two such rods?
  - $(22.1 \pm 0.05)$  cm
  - $(22.10 \pm 0.05)$  cm
  - $(22.1 \pm 0.05)$  mm
  - $(22.10 \pm 0.10)$  cm
- If energy  $E$ , velocity  $v$  and time  $T$  are chosen as fundamental quantities then dimension of surface tension will be represented as:-
  - $EV^{-1}T^{-1}$
  - $EV^{-1}T^{-2}$
  - $EV^{-2}T^{-2}$
  - $E^2V^{-1}T^{-3}$
- A dimensionless quantity
  - may have a unit
  - never has a unit
  - always has a unit
  - do not exist
- One astronomical unit (A U) is:
  - $10^8$  m
  - $10^{-10}$  m
  - $10^{-15}$  m
  - $1.5 \times 10^{11}$  m
- The dimensions of RC, where R is resistance & C is capacitance are same as that of
  - Inverse time
  - time
  - square of time
  - square root of time
- Dimensions of 'ohm' are same as that: (where  $h$  is Planck's constant &  $e$  is charge)
  - Inverse time
  - time
  - square of time
  - square root of time

- a.  $\frac{h}{e}$                       b.  $\frac{h^2}{e}$                       c.  $\frac{h}{e^2}$                       d.  $\frac{h^2}{e^2}$
8. Which one of the following has dimensions of pressure?
- a.  $\frac{ML}{T^2}$                       b.  $\frac{M}{L^2 T^2}$                       c.  $\frac{M}{LT^2}$                       d.  $\frac{M}{LT}$
9. If C represents capacitance, R represents resistance then the unit of  $CR^2$  are:-
- a. Henry                      b.  $\frac{\text{volt-second}}{\text{ampere}}$                       c.  $\frac{\text{volt}}{\text{ampere}}$                       d.  $\frac{\text{joule}}{\text{ampere}}$
10. Add  $(3.8 \times 10^{-6})$  to  $(4.2 \times 10^{-5})$  with due regard to significant figures.
- a.  $4.6 \times 10^{-5}$                       b.  $4.6 \times 10^{-6}$                       c.  $4.85 \times 10^{-5}$                       d.  $4.580 \times 10^{-5}$
11. The area enclosed by a circle of diameter 1.06 m with correct number of significant figure is :
- a.  $0.88 \text{ m}^2$                       b.  $0.883 \text{ m}^2$                       c.  $1.88 \text{ m}^2$                       d.  $0.88202 \text{ m}^2$
12. Subtract  $2.6 \times 10^4$  from  $3.9 \times 10^5$  with due regard to significant figures.
- a.  $3.64 \times 10^5$                       b.  $3.7 \times 10^5$                       c.  $3.6 \times 10^5$                       d.  $3.65 \times 10^6$
13. The correct number of significant figures in 0.0006032 is
- a. seven                      b. six                      c. eight                      d. four
14. Which of the following pair have same dimension
- a. Torque & work                      b. Angular momentum & Linear momentum  
c. Energy & young's modulus                      d. Energy & volume
15. A quantity  $x = \epsilon_0 r \frac{\Delta V}{\Delta t}$  where  $\epsilon_0$  is permittivity of free space  
L = length ,  $\Delta V$  = potential difference ,  $\Delta t$  = time interval. The dimensional formula for X is same as that of
- a. resistance                      b. charge                      c. voltage                      d. current
16. The physical quantity which has the dimensional formula as that of  $\frac{\text{energy}}{\text{mass} \times \text{length}}$  is
- a. Force                      b. power                      c. pressure                      d. acceleration
17. Which of the following have the same dimensions of as  $v^2/r$ ? Where v is speed of the particle describing the circular path of radius r?
- a. Acceleration                      b. momentum                      c. Force                      d. impulse
18. The frequency of vibration of mass M suspended from a spring of spring constant K is given by relation.  
 $f = C M^x k^y$   
The value of x and y are:
- a.  $x = \frac{1}{2}, y = \frac{1}{2}$                       b.  $x = \frac{-1}{2}, y = \frac{-1}{2}$   
c.  $x = \frac{1}{2}, y = \frac{-1}{2}$                       d.  $x = \frac{-1}{2}, y = \frac{1}{2}$
19. A thermal physical quality is measured in calorie per gram, its dimensional formula will be:-
- a.  $M L^0 T^{-2}$                       b.  $M^2 L^2 T^0$                       c.  $M^2 L T^{-2}$                       d.  $M^0 L^2 T^{-2}$
20. The density of the material of a cube is measured by measuring its mass and length to its side. If the maximum errors in the measurements of mass and length are 3% & 2% respectively, the maximum error in the measurement of density is:
- a. 1%                      b. 5%                      c. 9%                      d. 7%
21. What are the dimensions of  $\left(\frac{\text{force} \times \text{displacement}}{\text{time}}\right)$  in length?
- a. -2                      b. 0                      c. 2                      d. None of these
22. The dimensional formula for strain is same as that for:-
- a. Stress                      b. modulus of Rigidity  
c. thrust                      d. angle of twist
23. Dimensions of  $\frac{L}{RCV}$  are:
- a.  $A^{-1}$                       b.  $A^{-2}$                       c. A                      d.  $A^2$

24. The dimensional formula for Planck's constant h is:

a.  $ML^2T^{-2}$

b.  $ML^2T^{-1}$

c.  $M^{-1}L^2T^{-2}$

d.  $ML^2T^{+1}$

25. (Mean value-measured value) gives

a. Absolute error

b. relative error

c. gross error

d. random error

## CHEMISTRY

### UNIT I:

#### SOME BASIC CONCEPTS OF CHEMISTRY

Q1. Account for the following:

- In the combustion of methane in air, methane is limiting reagent.
- Molality is preferred over molarity in expressing the concentration of a solution.
- It is necessary to balance a chemical equation.
- Air is sometime considered as a heterogenous mixture.

Q2. When two substances A and B are mixed together in a pestel and mortar, a large amount of heat is evolved and a new substance C is formed. C has the properties different from A and B. Is C an element, a compound or a mixture?

Q3. How many moles and how many grams of sodium chloride(NaCl) are present in 250cm<sup>3</sup> of a 0.5M NaCl solution?

Q4. If 6.3 gram of NaHCO<sub>3</sub> is added to 15 gram of CH<sub>3</sub>COOH solution, the residue is found to be 18gram. What is the mass of CO<sub>2</sub> released in the reaction?

Q5. 3.0 gram of H<sub>2</sub> reacts with 29.0 gram of O<sub>2</sub> to form H<sub>2</sub>O

- Which is the limiting reactant?
- Calculate the maximum amount of H<sub>2</sub>O that can be formed.
- Calculate the amount of the reactant left unreacted.

Q6. (i) A compound (molecular mass=246g/mol) contains following elements:

Element % composition Relative no. of atoms

Element	% composition	Relative no. of atoms
A	9.76	0.406
B	13.01	0.406
C	26.01	1.625
D	51.22	2.846

From the data find out:

- Atomic masses of the element A,B,C and D.
- Simple atomic ratio of each element.
- Empirical formula.
- Molecular formula of the compound.

### UNIT II: STRUCTURE OF ATOM

Q7. An electron is in one of the 4p orbital. Give the possible values of n, l and m for the electron.

Q8. Can we apply uncertainty principle to a stationary electron?

Q9. When is the energy of electron regarded as zero?

Q10. Which of the following sets of orbital's are degenerate and why?

(i) 1s, 2s and 3s in Mg atom. (ii) 2p<sub>x</sub>, 2p<sub>y</sub> and 2p<sub>z</sub> in carbon atom.

Q11. How many nodes are present in 3p orbital?

- Q12.** What will happen to the wavelength associated with a moving particle if its velocity is reduced to half?
- Q13.** How many electrons are present in all sub shells (fully filled)  $n+l=5$ ?
- Q14.** What is Zeeman Effect and Stark effect?
- Q15.** Light of wavelength 4000 Å falls on the surface of cesium. Calculate the energy of the Photoelectron emitted. The critical wavelength for photoelectric effect in cesium is 6600 Å.
- Q16.** Calculate the frequency and the wavelength of the radiations in nm emitted when an electron in the hydrogen atoms jumps from third orbit to the ground state. In which region of electromagnetic spectrum will this line lie?
- Q17.** To which orbits the electron in the hydrogen atom will jump on absorbing 12.1 eV of energy?
- Q18.** a) what observations in scattering experiment led Rutherford to make following conclusions :
- The most of the space in an atom is empty.
  - The whole of the mass of the atom is present in the centre of the nucleus.
  - Nucleus has positive charge.
- b) What is the value of orbital angular momentum for an electron in 2s orbital?
- c) How many electrons in an atom may have  $n=4$  and  $m_s=+1/2$ ?

### UNIT III: PERIODIC CLASSIFICATION OF ELEMENTS

- Q19.** Which among  $I, I^+, I^-$  has smallest size?
- Q20.** To which block the elements with atomic numbers 28 and 32 belong?
- Q21.** Among alkali metals which element do you expect to be least electronegative and why?
- Q22.** The element 108 has not yet been discovered. What is its IUPAC name and symbol?
- Q23.** Give the general electronic configuration of s-block and p-block elements.
- Q24.** All transition elements are d-block elements, but all d-block elements are not transition element. Explain with example.
- Q25.** Give reasons
- Halogen acts as a good oxidizing agent.
  - Electron gain enthalpy of noble gas is almost zero.
- Q26.** The increasing order of reactivity among group 1 elements is  $Li < Na < K < Rb < Cs$  whereas that among group 17 elements is  $F > Cl > Br > I$ . Explain.
- Q27.** Arrange the element N, P, O and S in order of increasing first ionization enthalpy and increasing non-metallic character. Give reason for the arrangement assigned.
- Q28.** i. Justify the given statement with suitable example “The properties of the elements are a periodic function of their atomic numbers”.
- Discuss the factors which determine the magnitude and sign of electron gain enthalpy and are the trends of its variation in the periodic table.
- Q.29** Make a table of electronic configuration of all the elements and learn their atomic numbers.
30. Draw the spectrum of electromagnetic radiation and visible spectrum in your notebooks so as to elaborate their significance.
31. 1 Prepare a project report containing at least 10 pages related with environmental chemistry.

## **BIOLOGY**

- Do all the NCERT Exemplar questions of chapters completed in class
- Investigatory Project Report to be made on the topics allotted in class.
- Do following assignment in your holidays' homework notebook.

### **The Living World**

- Why growth and reproduction cannot be taken as defining property of all living organisms ?
- How is a taxon (pl. taxa) defined?

3. What is the difference between Botanical Garden and Herbarium?
4. Keys are analytical in nature and are helpful in identification and classification of organisms. How?
5. Define : (a) Genus (b) Family (c) Order
6. What are the universal rules of nomenclature? What does 'Linn.' refer to in *Mangifera indica* Linn.?

### Classification of organisms

1. Which organisms are the chief producers in oceans?
2. Name the fungus which causes disease in wheat (i) rust (ii) Smut.
3. Which Ascomycetes has been used extensively in biochemical and genetic work?
4. How are bacteria classified on basis of their shapes?
5. What is the mode of reproduction in bacteria?
6. Why are red tides caused and why are they harmful?
7. Viruses and viroids differ in structure and the diseases they cause. How?
8. Which class of kingdom fungi has both unicellular as well as multicellular members? When is a fungus called coprophilous?
9. Who gave five kingdom classifications? What were the criteria used by him?
10. What are the steps in the sexual cycle in kingdom fungi?

### Kingdom Plantae

1. What is a pyrenoid body?
2. Define gemma.
3. Which group of plants is regarded as first terrestrial plants? Why?
4. Which organism is regarded as one of the tallest tree species?
5. The gametes and spores of phaeophyceae have a distinct morphology. Give its name.
6. Which substance has structural similarity to floridean starch?
7. Name the organisms which exhibit heterospory can can exhibit seed habit.
8. *Sphagnum* has a lot of economic importance. Justify.
9. Gymnosperms can show polyembryony. Why do you think so ?
10. How is leafy stage formed in mosses ? How is it different from protonema ?
11. Draw the life cycle of an angiosperm along with a brief note on double fertilisation.
12. Pteridophytes and Gymnosperms have haplo-diplontic life cycle. Explain.

### Kingdom Animalia

1. Distinguish between the chordates and non-chordates.
2. When is the development of an organism called as Indirect?
3. Why are corals important ?
4. What is the difference between class Amphibia and class Reptilia in respect of their skin ?
5. Which phylum consists of organisms with cellular level of organisation?
6. Name the arthropod which is a (i) Living fossil, (ii) Gregarious pest.
7. Which organ helps in excretion in (i) Arthropods, (ii) Hemichordates?
8. Distinguish between poikilothermous and homoiothermous organisms.
9. Define metagenesis with a suitable example.
10. List the characteristic features of class Mammalia.
11. What is the difference between organisms on the basis of the coelom? Give examples for each.
12. Compare the water transport (vascular) system of poriferans and the echinoderms.

### Morphology in Flowering Plants

1. Which part of opuntia is modified to form spines?
2. Name one plant in which leaf is pinnately compound.

3. In mangroves, pneumatophores are the modified adventitious roots. How are these roots helpful to the plant ?
4. Which part of mango fruit is edible?
5. Why do various plants have different type of phyllotaxy?
6. State the main function of leaf tendril.
7. The endosperm is formed as a result of double fertilisation (triple fusion).  
What is its function?
8. Which type of venation do you observe in dicot leaf?
9. In pea flower, the aestivation in corolla is known as vexillary. Give reason.
10. Flower is a modified shoot. Justify.
11. Name the type of root for the following :
  - (a) Roots performing the function of photosynthesis.
  - (b) Roots come above the surface of the soil to absorb air.
  - (c) The pillar like roots developed from lateral branches for providing mechanical support.
  - (d) Roots coming out of the lower nodes of the stem and provide the support to the plant.
12. 'Potato is a stem and sweet potato is a root.' Justify the statement on the basis of external features.
13. Differentiate between :
  - (a) Actinomorphic flower and Zygomorphic flower
  - (b) Apocarpous ovary and Syncarpous ovary
  - (c) Racemose inflorescence and Cymose inflorescence
14. Describe various stem modifications associated with food storage, climbing and protection.

### **Music**

1. Make a collage/ chart showing different types of Indian musical instruments and their origin.
2. Make a PPT on short description of Raga Bhairvi & Bihag and insert music related to these talas in your slides.

### **Physical Education**

1. a) Make a Report file on 'Components of Physical Fitness' using A3 sheets. (Roll No 1 to 20)
- b) Make a report on component of health related fitness on A3 sheet (Roll No 21 onwards)
2. Calculate your BMI & Waist Hip Ratio and mention it on last page of your file.