SAMPLE
CLASS 10

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NAME : SONAL SINGH
ROLL NO.-00   THURSDAY 17 APRIL 2025
CLASS : 10   ASSIGNMENT NO. - 04
SCHOOL : IDEAL INTERNATIONAL SCHOOL

marks obtained						
full marks						
subject	english	hindi	maths	science	social science	total

Don't take rest after your first victory because if you fail in second, more lips are waiting to say that your first victory was just luck.
Abdul Kalam

1.The following passage has not been **edited**. There is one error in each line. Write the incorrect word and the correction. The first one has been done as an example.

	Incorrect word	Correction
Inactivity is the greater cause of overweight	greater	greatest
these days. People physical activity	a-_____	_____
had decreased these days. The main reason	b-_____	_____
being there is many labour saving devices.	c-_____	_____
People does not want to walk on foot.	d-_____	_____
They spend enough time sitting and	e-_____	_____
watch television. Their excess weight	f-_____	_____
make them sick and they have to spend	g-_____	_____
money in medicine.	h-_____	_____

2. In the passage below one word has been **omitted** in each line. Write the missing word and the word before and after.

One thing we all must do to cooperate	a._____	_____	_____
with police and pay heed to their advice.	b._____	_____	_____
They warn us not touch unidentified,	c._____	_____	_____
unclaimed, suspicious objects like transistors,	d._____	_____	_____
brief cases etc. We need watch out for	e._____	_____	_____
abandoned cars, scooters report the	f._____	_____	_____
details such objects to the nearest police	g._____	_____	_____

control room dialing 100. One should   h._____   _____   _____

not touch the objects till the bomb disposal squad arrives.

3. Based on your reading of the poem **'MIRROR'**, answer the following questions briefly.

 (i) It is not the mirror but the woman herself who is responsible for the pain that she

    experiences. Comment.

(ii) Why has the mirror been called 'a four-cornered God'. What are its qualities?

1. Look at the words and phrases below. **Rearrange** them to form meaningful sentences. The first one has been done as an example.

the watermelon/thirst quenchers/in summers/is/one of the best.

One of the best thirst quenchers in summers is the watermelon.

(i) around/it is/96 countries/cultivated in/the world

(ii) in Africa/about 5000 years/grown/ago/it was/first

(iii) say that/at the/it was grown/some researchers/same time/in India

(iv) the travellers/across a desert/it was/when they/used by/travelled

1. Use the information in the **headlines** to complete the news items given below.

(a) TV SHOW LANDS BOY IN HOSPITAL

A popular show on a Tamil TV channel _____ a 13 year old boy in

hospital, when he filled his mouth with Kerosene and blew it over fire, in an attempt

to imitate the show.
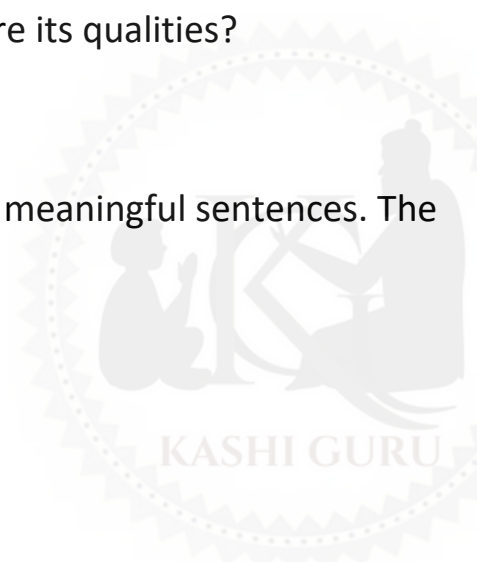
(b) 2 KILLED IN BLUELINE ACCIDENT

_____ bus here on Monday, one, an 18-year-old boy and the other

acyclist.

(c)CHINA DEVELOPS MEDICAL ROBOT

Apolytechnic university in china _____ that can conduct surgeries.

3.Answer the following **questions** briefly.

(i)Describe the character of Mrs. Packletide.

(ii)Mrs.Packletide is vain and full of self-importance and can go to any extent to maintain her

   public image. On the basis of your understanding of the story, Mrs. Packletide's Tiger, briefly

   describe the values that can make one lead a truly happy life.
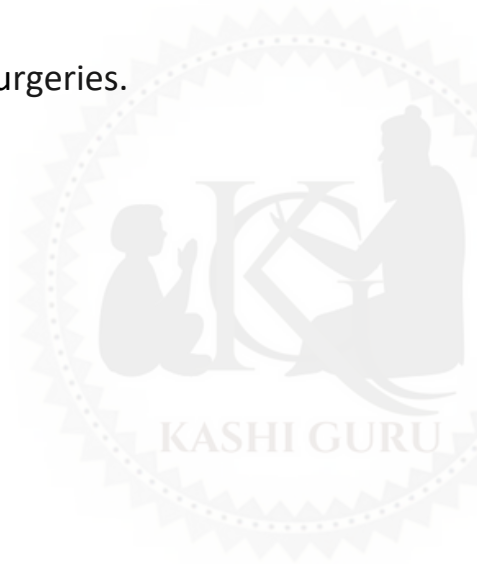
(Minerals and Energy Recourses)

1. In which forms do the minerals occur? Give examples for each.

2Write about the iron belts in India Briefly.

3. How are metallic minerals like tin, copper Zinc and lead etc. obtain?

4. Whyis the use of Non-Conventional sources of energy becoming essential these days?

5. State two main uses of copper. Also mention some major copper-producing districts of India.

6. How is energy an indispensable need of our modern life? Explain with examples.
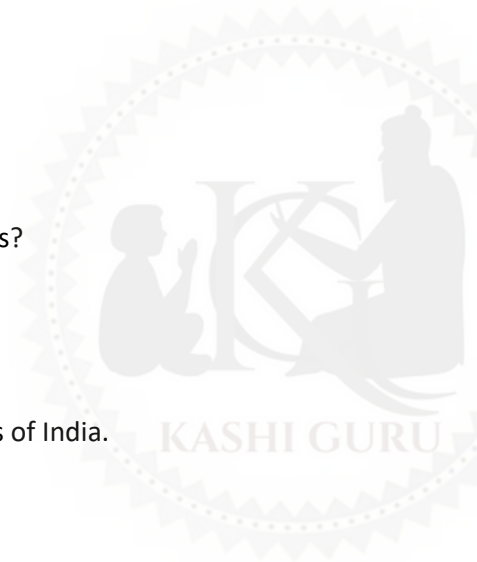
7. How is aluminium an important metal?

8. What is a mineral? Describe its importance in our lives.
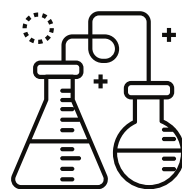
9. How can we conserve energy resource?

10. Distinguish Between:

(a)Ferrous and Non-Ferrous minerals

(b)Conventional and Non-Conventional sources of energy

CHEMISTRY
CARBON AND ITS COMPOUNDS

1. mark questions

1. Name of the organic compound, which can be produced by fermentation of sugar and is a constituent of beer.

2. Name the main products formed when :

   (i) Ethanol is oxidized by an alkaline solution of $KMnO_4$

   (ii) Ethanol is heated with conc. H_2SO_4

3. What is denatured alcohol

4. Name the product formed besides soap that is obtained during saponification process.

5. The molecular formula of the consecutive members of a homologous are C_6H_{14} and C_7H_{16}. Write the molecular formulae of members having 9 and 11 carbon atoms of this homologous series.

6. Write the names of functional groups present in (a) ethanol (b) ethanoic acid.

7. The structural formula of an ester is $C_2H_5COOH_3$

   Write the molecular formula of the alcohol and acid from which it would have been formed.

8. The molecular formulae of two members of a homologous series are C_3H_4 and C_6H_{10}

9. Which of the following belonging to the same homologous series ? Why ? C_3H_8, C_3H_6, C_4H_8, C_4H_6.

10. What are addition reactions ? Give example

11. What is the difference between two consecutive members of a homologous series.

    (i) in terms of molar mass

    (ii) in terms of number and kind of atoms ?

12. Complete the equation : $C_2H_5COOH + NaOH + heat \rightarrow$

13. What type of bounds are present in hydrocarbons ? Why are they insoluble in water ?

14. Why do some people add common salt during the preparation of soap ?

15. Why have detergents replaced soap as a washing agent ?

16. Explain why ethene decolourises bromine water whereas ethane does not.

17. What is meant by saponification ?

18. What is vinegar ?

19. Give one advantage of daughter over soap. Why does soap form white precipitate with hard water ?

20. What are the two properties of carbon which lead to the huge number of carbon compounds we see around us ?

2mark questions

21. Give reason for the following :
    (i) Burning of ethanol gives CO2 while ethanol when oxidized with alkaline KMnO4 produces ethanoic acid.
    (ii) Alcohol supplied for industrial purpose is mixed with copper sulphate.

22. Complete the following equations and write the names of products formed :
    (i) CHCOOH+NaOH +heat $\rightarrow$
    (ii) CH3OH + O2 +heat$\rightarrow$

23. Explain given reason : Detergents made up molecules, in which branches is minimum, are preferred these days.

24. Name the product obtained and the chemical equations for oxidation of ethanol to different stages.

25. Explain the cleansing action of soaps with diagram.

26. An organic compounds 'A' is a constituent of antifreeze. The compound on heating with oxygen forms another compounds B which has a molecular formula C2H4O2. Identify the compound 'A' and 'B'. Write the chemical equation of the reaction that takes place to form the compound 'B'.

27. Compound 'X' is a symmetrical gaseous hydrocarbon. Its molecular mass in 28. Write the chemical reaction of 'X' with H2 gas in Nickel. An organic

28. compound 'X' which is sometimes used as an anti-freeze has the molecular formula C2H6O. 'X' on oxidation gives a compound 'Y' which gives effervescene with a backing soda solution. What can 'X' and 'Y' be ? Write their structural formulae.

29. What are synthetic detergents ? Give one example of synthetic. Write its two advantages over soap.

30. Why is mixture of water and alcohol used instead of water in radiators of vehicles in clod counties ? Give one reasons.

3mark questions

31. (a) Write the chemical equation representing the conversion of ethane.

    (b) Name of product obtained when butanol is oxidized by acidified K2Cr2O7.

32. What happens when ethanoic acid reacts with (i) Magnesium (ii) Sodium carbonate and (iii) Sodium hydroxide ? Write the necessary chemical equation in each case.

33. What are esters ? How are they formed ? Where do they occur in nature ? Give one example.

34. Give an example each of (i) a straight chain hydrocarbon, (ii) branched chain hydrocarbon and (iii) ring chain hydrocarbon.

35. What is an homologous series ? Explain with an example.

36. An organic compound 'A' has molecular formula C3H8O. This compound, on heating with alkaline potassium permanganate or acidified potassium dichromate, gives another organic compound 'B' which turns blue litmus red. Identify the compound 'A'. Write chemical equation of the reaction that takes place to form the compound 'B'. Name the compound 'B'.

37. A neutral organic compound A of molecular formula C2H6O, on oxidation with potassium dichromate and sulphuric acid, gives an acidic compound B. The compound A reacts with B on warming in the

presence of conc. H2SO4 to give a sweet smelling substance C. Identify A, B and C.

38. Three bottles without labels are known to contain ethanol, thanoic acid and soap solution separately. How will you test which bottle contains which substance ?

39. What will be the formula and electron dot structure of (a) cyclopentane (b) ethanoic acid (c) propanone.

40. Draw the structure of the following compounds
(a) Bromopentane (b) Butanone (c) Hexanal
Are structural isomers possible for bromopentane ?

5mark questions

41. Chemical compound 'A' is produced by heating 'B' with conc. H2SO4, 'B' burns in air with blue flame to form CO2 and H2O. On reacting with K2Cr2O7 'B' produced a compound 'C' which turns blue litmus red. Identify the compounds A, B and C. Give their structures. Describe the process of preparation of the compound 'A' from sugar.

42. Describe one method for the preparation of ethanoic acid. Give it's two chemical two physical properties and three uses. What is saponification ?

43. Describe how soap is prepared in the laboratory. Explain the cleansing action of soap with diagram.

PERIODIC CLASSIFICATION OF ELEMENTS

1. mark questions

1. If an element with atomic number 'A' is an inert gas. In which group would you find and element with atomic number (A – 1) ?

2. An element has atomic number 13. In which period and group it should be placed ?

3. Element 'A' is an alkali metal. How many electrons would be present in its outermost shell ?

4. Element 'B' is a halogen. How many electrons are present in its outermost shell ?

5. Which of the two elements A (2, 8, 1) and B (2, 8, 8, 1) is more electropositive ? Why ?

6. A, B, C and D have boiling points – 1880 C, 590 C, - 540 C and 1830 C

7. respectively. These belong to group 17. Name the element with highest atomic number.

8. Indicate the elements which belong to the same group from their atomic numbers as 9, 17, 24, 30, 35, 45.

9. What is the similarity in the electronic configuration of Mg, Ca and Sr ?

10. Name the members of alkaline earth family. Which out of them is radioactive in nature ?

11. Which of the following species are isoelectronic in nature ?
(i) Ca2+ (ii) K (iii) Mg2+ (iv) S2- (v) Cl

12. How many groups and periods are present in the long form of periodic table ?

13. How is metallic character of an element expressed ? How does it change in period ?

14. An element 'X' belongs to the second group of periodic table. What is the formula of its chloride ?

15. An element 'B' belongs to the second period and Group 13. Give the formula of its oxide.

What are the names of Group 1 and Group 17 elements ?

2mark questions

16. If an element with atomic number 'A' is an inert gas. In which group would you find and element with atomic number (A + 2) ?

17. In the following set of elements, one element does not belong to the set. Select this element and state why it does not belong to that set;
Oxygen, nitrogen, carbon, chlorine, fluorine.

18. Consider the following elements :
Na, Ca, Al, K, Mg, Li

19. Calcium is an element with atomic number 20.

20. For the main group of periodic table given as follows:

1	2	13	14	15	17	17	18
H A C							

    (a)   Which element if the most metallic ?

    (b)   Which atom is the largest ?

21. Why does atomic size progressively become smaller (atomic radius decreases from Na to Cl) ?

22. The elements, chlorine, bromine and iodine have been put in the same group on the basis of their similar chemical properties:

    (c)   What are those similar properties ?

    (d)   What is the common name of this group of family ?

23. Consider the following elements : Na, Ca, Al, Mg, K, Li

    (a)   Which of these elements belong the same period of the periodic table ? Why ?

    (b)   Which of these elements belong to the same group of the periodic table ? Why ?

24. Given below are the melting points and the atomic radii of three element A, B and C of the periodic table each having 'n' electrons in the outermost shell of their atoms.

Elements	A	B	C
Melting points (0C)	180.3	97.6	63.5
Atomic radii (A0)	1.31	1.52	1.94

25. The atomic numbers of three elements A, B and C are given below:

Element	A	B	C
Atomic Number	3	9	11

3mark questions

26. The electronic configuration of an element X is

K	L	M
2	8	6

(i) What is the group number of element X in the periodic table ?

(ii) What is the period number of element X in the periodic table ?

(iii) What is the number of valence electrons in an atom of X ?

27. The position of three elements X, Y and Z in the periodic table is given below :

Group 16	Group 17
_____	Z
_____	Y
_____	_____
X	_____

(a) State whether Z is a metal or a non-metal

(b) Will Z be large or smaller than X ?

(c) Which type of ion, cation or anion will be formed by element Z ?

28. Which of the following has bigger size ? Why ?

(i) Na or K   (ii) C or N   (iii) Cl or Br

29. Name two other elements which belong to the same family.

(i) Fluorine   (ii) Calcium   (iii) carbon

30. What are Dobereiner's triads ? Explain with one example.

5mark questions

31. A part of periodic table is given below. The elements lithium, carbon, sulphur and argon have been placed in their correct position. The positions of other elements are represented by hypothetical letters.

1	2	13	14	15	16	17	18
Lithium	A	B	Carbon	C	D	E	F
I			G		Sulphur		Argon
J			H			M	
K					L	N	

With reference to this table, answer the following :

(a)   Which of these has largest radius ?

(b)   Which of these has electron configuration (2, 8, 4) ?

(c)   What is the electron arrangement of J ?

(d)   Name the family of elements represented by E, L, M and N

(e)   Which of these is an alkaline earth metal ?

32.   Two elements X and Y belong to groups 1 and 2 respectively in the same period. Compare them with respect to

(a)   the number of valence electrons

(b)   valency

(c)   metallic character

(d)   size of the atoms

(e)   formulae of their oxides and chlorides.

33.   Write the electronic configurations of atoms of (a) potassium (K), (b) lithium (Li), (c) fluorine (F), (d) chlorine (Cl). Atomic number of K is 19, of Li is 3, of F is 9 and of Cl is 17. Use these electronic configurations to explain why potassium is more reactive than lithium, and fluorine more reactive than chlorine.

34.   (a)   What happens to basic character of oxides down the group and why ?

(b)   What happens to acidic character of oxides along the period and why ?

(c)   Which group elements can lose electrons most easily and why ?

35.   Which element has

(a)   two shells, both of which are completely filled with electrons.

(b)   The electronic configuration 2, 8, 2 ?

(c)   A total of three shells, with four electrons in the valence shell ?

(d)   A total of two shells, with three electrons in the valence shell ?

(e)   Twice as many electrons in the second shell as in its first shell ?

HOTS (High Order Thinking Skill) questions

"CARBON AND IT'S COMPOUNDS."

1. Drawthestructure of glyceride.

2. Whatdoyou mean by a multiple bond ? Show the formation of a doublebond in Ethane by electron dot stricture.

3. 'X' is acompound has very high melting point and is brittle while 'Y' has lowmelting point and is a gas. What are the types of compounds 'X' and'Y'and differentiate them by the following two properties :

    a) conductivity

    b) solubility in water

4. Is combustion an oxidation reaction ? Explain with examples.

5. Bring out the following expressions:

    a) Propanol to sodiumpropoxide

    b) Ethanol to ethane

    c) Ethene to ethane

    d) Eethylethanoate to ethanol

    e) Ethanol to ethanoic acid

6. Account for the spherical shape of micelles.

7. What is the state of micelle in solution ?

8. Identify A, B & C

    $A + CH_3CH_2OH \rightarrow CH_3 - COOC_2H_5 + C$

    $CH_3COOH + A \rightarrow B + H_2O + CO_2$

9. Which form of energy is used for chlorination of methane ?

10. What is the difference in structure in between cyclohexane and benzene?

11. Micelles stay in solution as a colloid and will not come together to precipitate. Give reason.

DIGESTION AND ABSORPTION

1.   Define digestion.

2.   Why do you refer to human teeth as:

   a) Thecodont

   b) Heterodont

   c) Diphyodont

3.   Give the dental formula of

   a) Human adult

   b) Human milk teeth

4.   Draw a neat labeled diagram showing the anatomy of wall layers of alimentary canal.
   Also mention the names of different layers.

5.   Name the salivary glands.

6.   What are villi? Write their function.

7.   Draw neat labeled diagrams of the following:

   a) Section of small intestinal mucosa showing villi.

   b) The duct systems of liver, gall bladder and pancreas.

8.   Pancreas is known as heterogenous gland. Give reason.

9.   Differentiate between 'bolus' and 'chyme'.

10.   Bile does not contain any enzyme. Still it is important for digestion. Justify.

11.   Describe the process of starch digestion in the alimentary canal.

12.   Harsh took bread and butter for his breakfast. Explain the course of digestion of butter in his digestive
   system. Also mention the enzymes involved.

13.   Make a table showing different enzymes involved in protein digestion, their site of secretion and function

14.   List the functions of large intestine.

15.   Briefly describe two disorders associated with digestive system.

PARTS OF THE DIGESTIVE SYSTEM

Label the different parts of the digestive system and write the correct answer in the box provided.
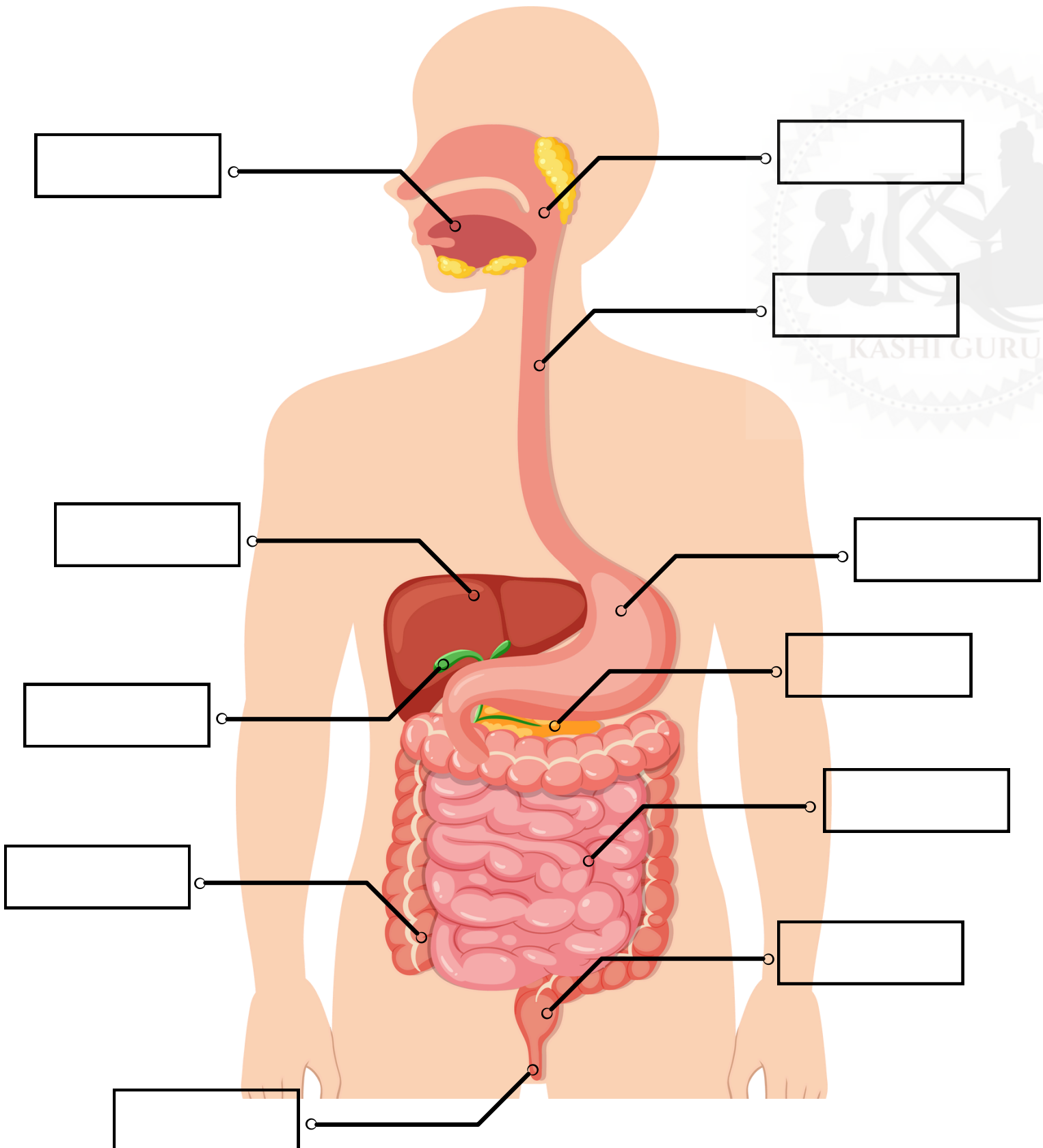
HUMAN SENSE ORGANS: HEARING

Human hearing is remarkable as it allows us to hear sounds in our environment, such as birds singing or cars honking. Sound waves are picked up by our ears and then sent to our brain, which interprets the sound.

LABEL
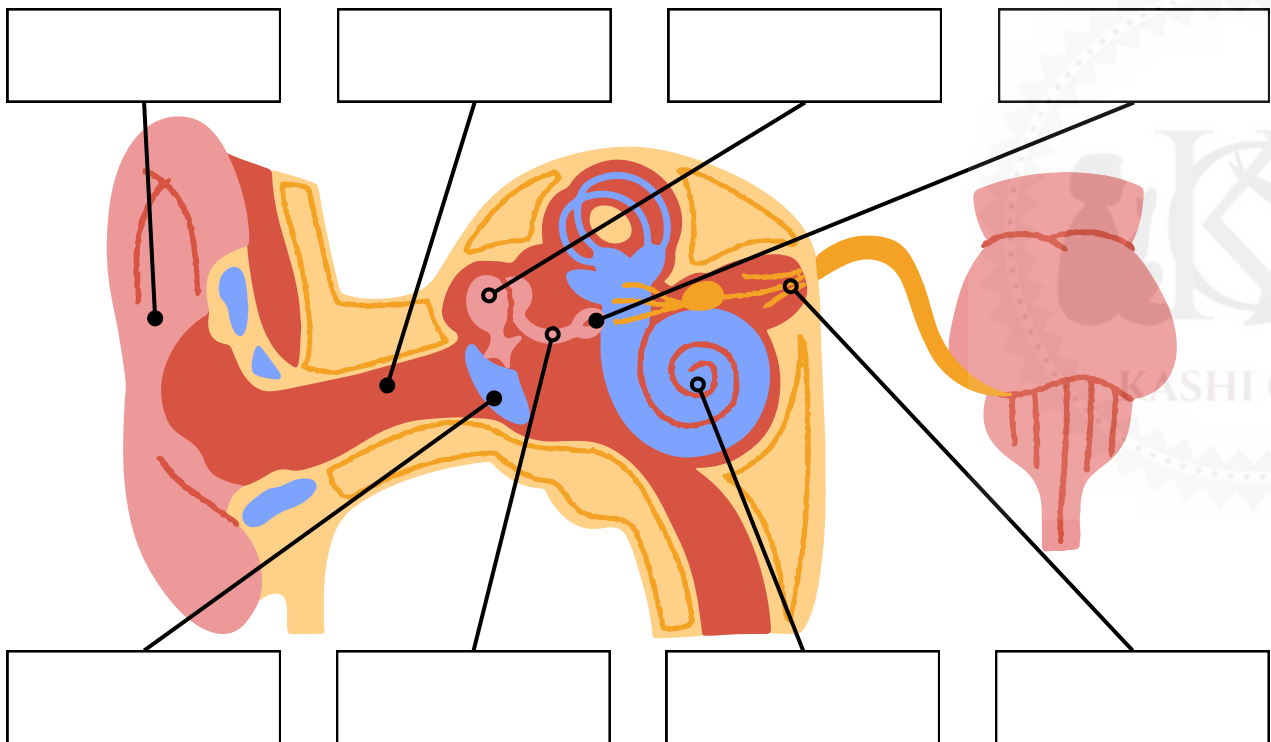
FUN FACT: The human ear can distinguish up to 10,000 different sounds.

ARRANGE THE STEPS OF HEARING PROCESS IN SEQUENTIAL ORDER (1-7)

☐ The small bones transmit vibrations to the cochlea, an organ in the inner ear.

☐ The brain recognizes the signals as sound and we can hear!

☐ Sound waves travel through the air and enter our ears.

☐ The hair cells then send electrical signals to the brain through the auditory nerve.

☐ The eardrum vibrates from the sound waves and sends a signal to the tiny bones in the middle ear.

☐ The sound waves travel through the ear canal and reach the eardrum.

☐ The cochlea is filled with fluid and tiny hair cells that move when the sound waves reach them.

HUMAN SENSE ORGANS: SKIN

Skin is the largest sense organ in the body and helps us feel things like pressure, temperature, and pain. It also helps us to stay healthy by protecting us from bacteria and other germs.

LABEL
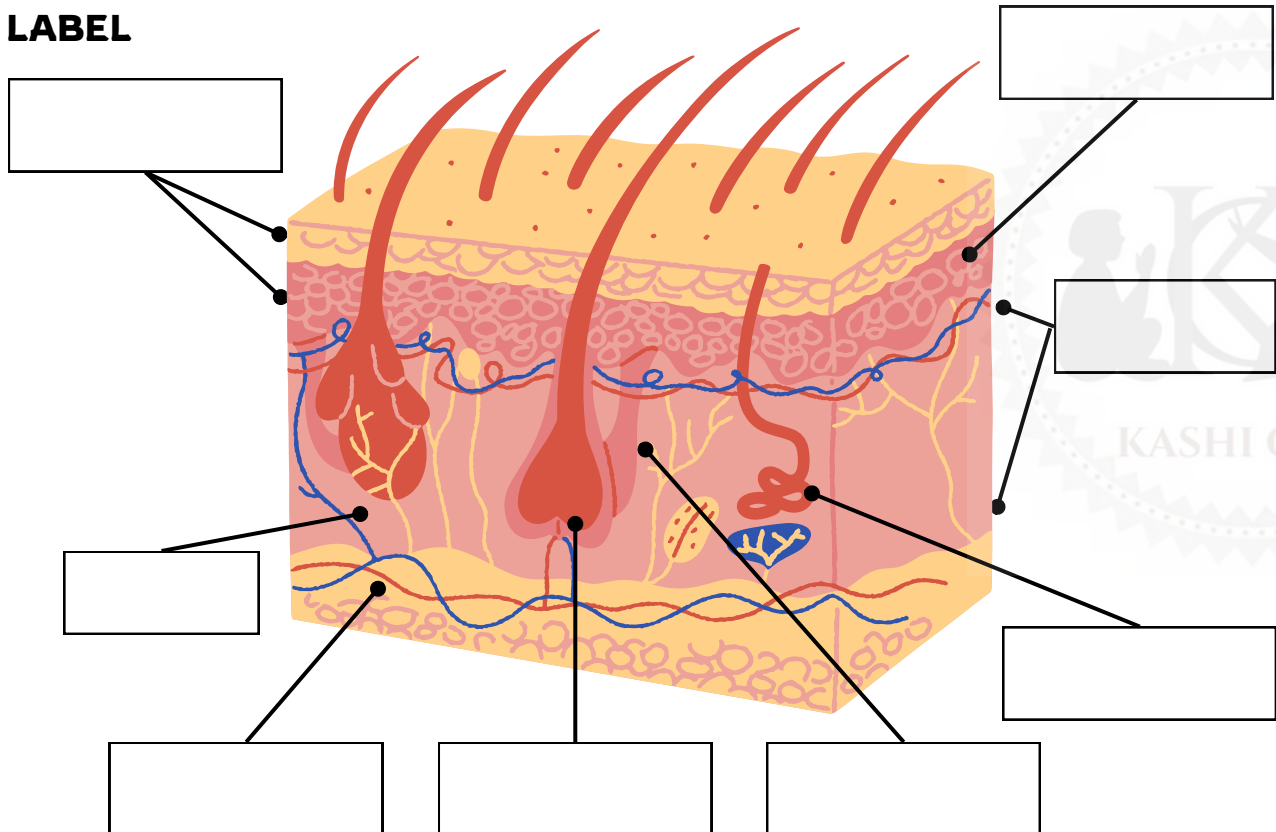
FUN FACT:

Human skin is the largest organ in the body and covers over 20 square feet.

MATCH HOW THESE NERVE ENDINGS HELP US SENSE TOUCH?

Merkel disc

Detect deep pressure, vibration, and acceleration.

Detect deep pressure and stretching of the skin.

Detect light touch and pressure.

Detect touch and pressure.

Ruffini ending

Pacinian corpuscle

Root hair plexus

HUMAN SENSE ORGANS: EYE

The eyes are one of the most important human sense organs. They help us see the world around us by sensing light and sending information to the brain.

LABEL
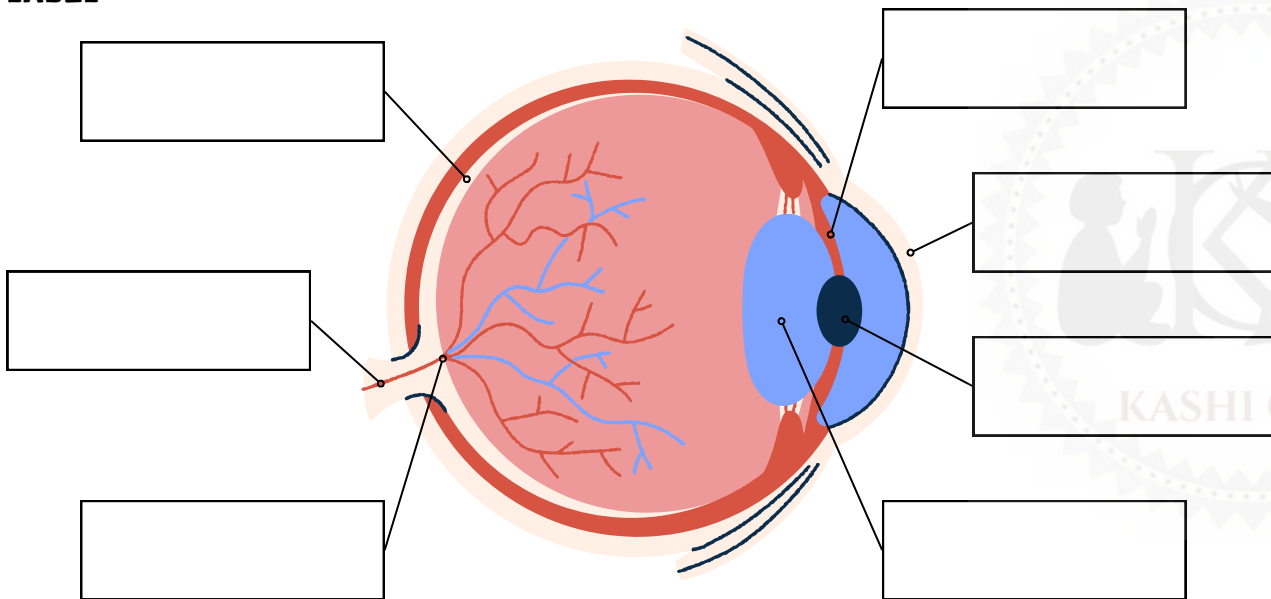
CLOSE UP OF THE RETINA
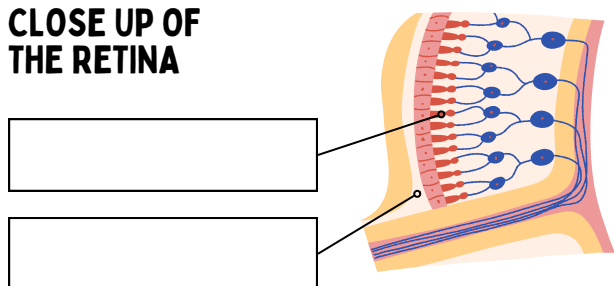
What are the photoreceptors?
What does each do?

FUN FACT:

The human eye can distinguish up to 10 million different colors.

How does our vision work?

_____

_____

_____

_____

_____

_____

_____

LABEL THE KIDNEY

Below is a diagram of the human kidney. Write the labels in the correct boxes. Use the word bank at the bottom of the page to help you.
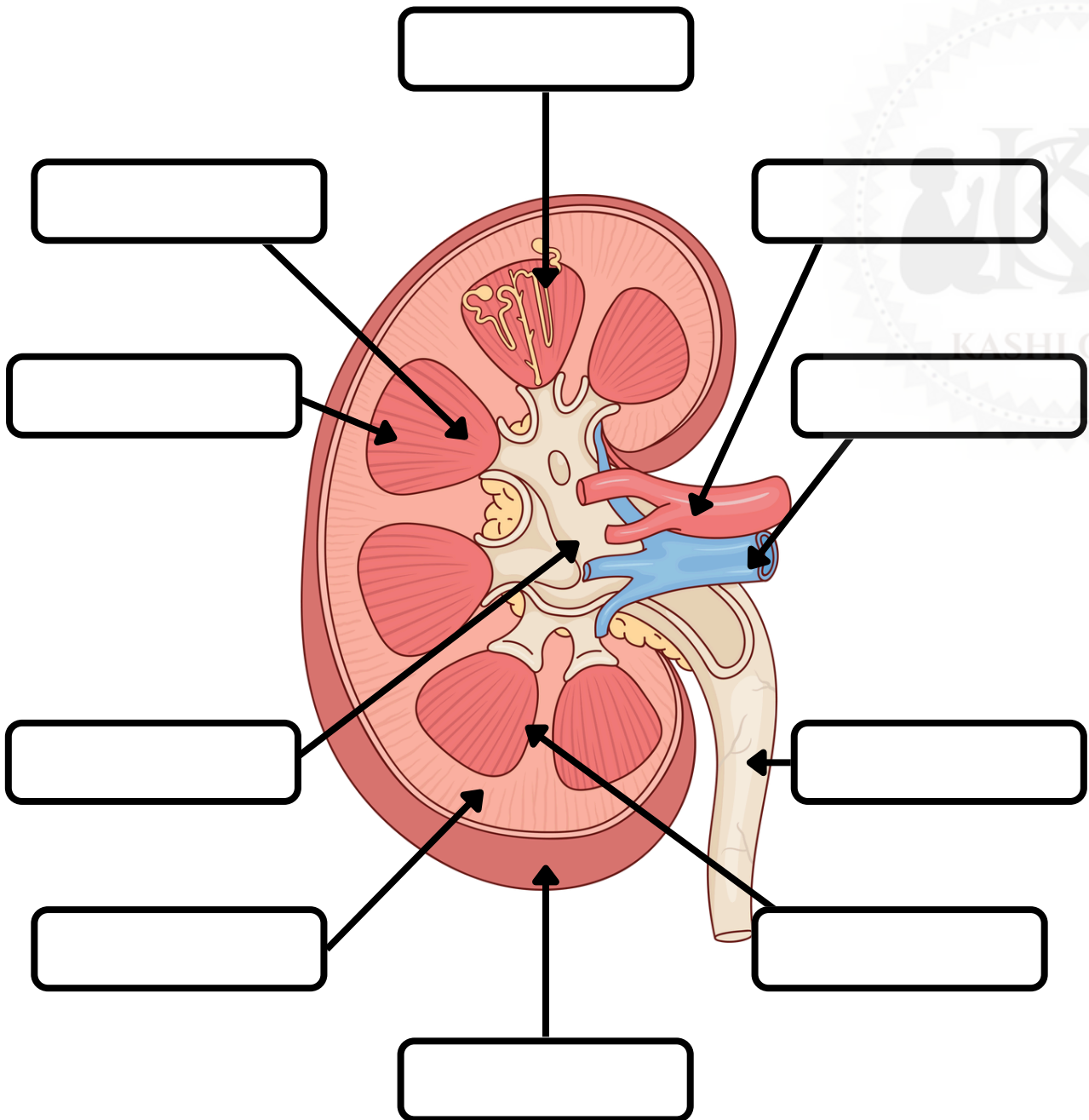
| renal artery | pyramid | renal pelvis | medulla | renal vein |
| capsule | cortex | nephron | ureter | papillae |

The Digestive System

Describe the function of each structure involved in the digestive system in the table below. Use the information from the table to label and color the diagram.
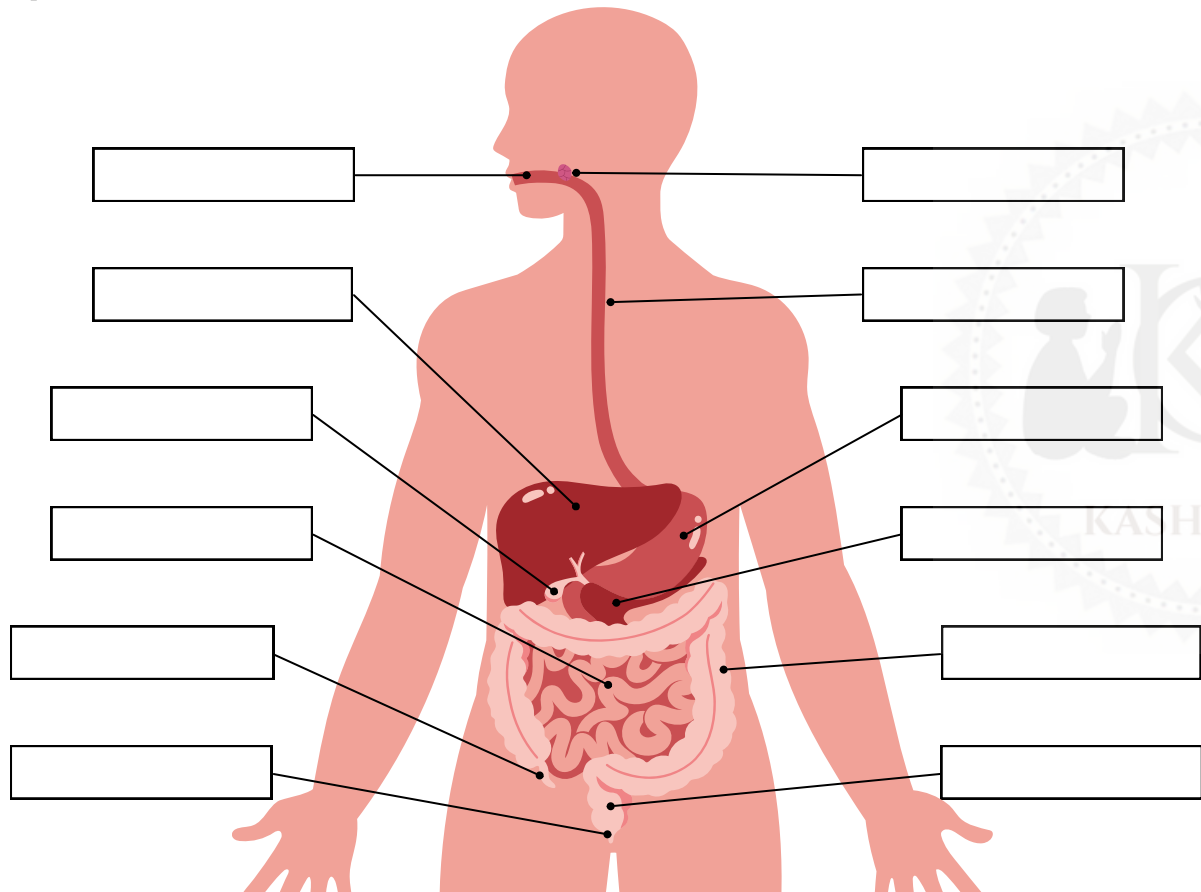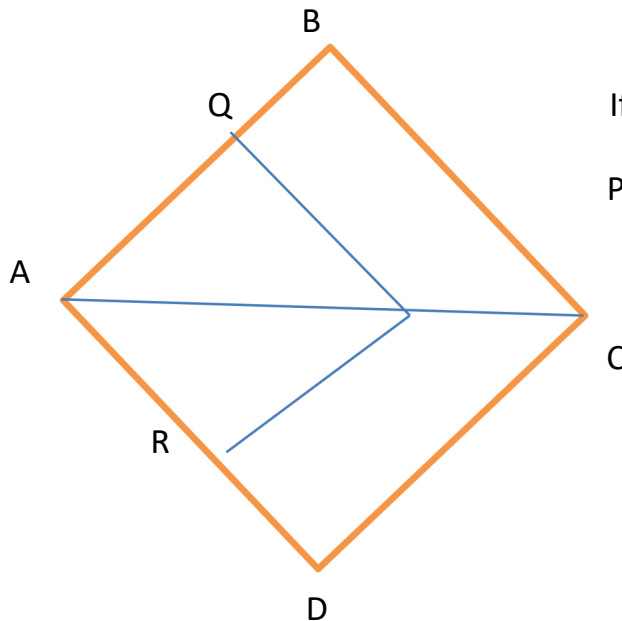
Structure	Function
mouth	
salivary glades	
esophagus	
liver	
stomach	
gallbladder	
pancreas	
large intestine	
small intestine	
appendix	
rectum	
anus	

TRIANGLES

1. Let X be any point on the side BC of a triangle ABC. If XM, XN are drawn parallel to BA and CA, BA in M and N resprctively, MN meets BC produced in T.

2.

If PQ II BC and PR II CD

Prove that   AR/AD = AQ / AB

3. ABCDisaquadrilateral,P,Q,RandSarethepointsoftrisection of sides AB, BC, CD and DA respectivelyandareadjacenttoAandC;ProvethatPQRSisaparallelogram.

4.
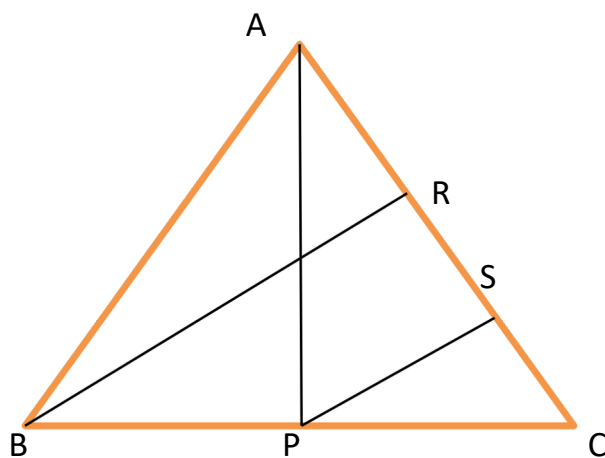
Inthegivenfigure,P is the mid point of BC and Q

isthemidpointofAP. If BQ when produced

meets AC at R.

ProvethatRA=1/3 CA

5. ThroughthemidpointMofthesideCDofaparallelogramABCD, the line BM is drawn intersecting AC inL and AD producedinE.ProvethatEL =2 BL

6. Through thevertexDofaparallelogramABCD,alineisdrawnto intersect the sides BA and BC producedatEandFrespectively.Provethat   DA/AE=FB/BE = FC/ CD.

7. ABC is a righttrianglerightangledatB.LetDandEbeanypoints on AB and BC respectively. Prove that AE2+CD2=AC2+DE2.

TRIANGLE

Choose the correct answer from the given four options:
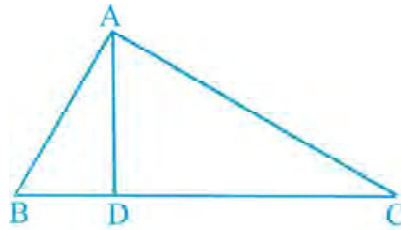
1. In Fig. 6.2, ∠BAC = 90° and AD⊥BC. Then,

Fig. 6.2

(A) BD . CD = BC^2

(B) AB . AC = BC^2

(C) BD . CD = AD^2

(D) AB . AC = AD^2

2. The lengths of the diagonals of a rhombus are 16 cm and 12 cm. Then, the length of the side of the rhombus is

(A) 9 cm   (B) 10 cm   (C) 8 cm   (D) 20 cm

3. If▲A B C ~▲E D F and▲A B C is not similar to▲D E F, then which of the following is not true?

(A) BC . EF = A C. FD

(B) AB . EF = AC . DE

(C) BC . DE = AB . EF

(D) BC . DE = AB . FD

4. If in two triangles ABC and PQR, $\dfrac{AB}{QR} = \dfrac{BC}{PR} = \dfrac{CA}{PQ}$, then

(A) ▲ PQR ~▲CAB

(B) ▲ PQR ~▲ABC

(C) ▲CBA ~▲PQR

(D) ▲BCA ~▲PQR

5. In Fig.6.3, two line segments AC and BD intersect each other at the point P such that PA = 6 cm, PB = 3 cm, PC = 2.5 cm, PD = 5 cm,∠APB = 50° and   CDP = 30°. Then,∠PBA is equal to
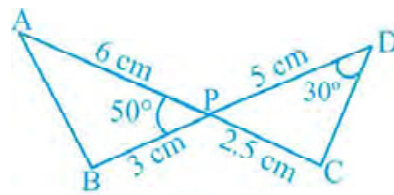

Fig. 6.3

(A) 50°   (B) 30°   (C) 60°   (D) 100°

6. If in two triangles DEF and PQR,∠ D =∠Q and∠ R =∠ E, then which of the following is not true?

(A) $\dfrac{EF}{PR} = \dfrac{DF}{PQ}$

(B) $\dfrac{DE}{PQ} = \dfrac{EF}{RP}$

(C) $\dfrac{DE}{QR} = \dfrac{DF}{PQ}$

(D) $\dfrac{EF}{RP} = \dfrac{DE}{QR}$

7. In triangles ABC and DEF, angle B = E, F = C and AB = 3 DE. Then, the two triangles are

(A)congruent but not similar

(B) similar but not congruent

(C)neither congruent nor similar

(D) congruent as well as similar

8. It is given that ▲ABC ~ ▲PQR, with $\dfrac{BC}{QR} = \dfrac{1}{3}$. Then, $\dfrac{ar\,(PRQ)}{ar\,(BCA)}$ is equal to

(A)9   (B) 3   (C) $\dfrac{1}{3}$ (D) $\dfrac{1}{9}$

9. It is given that ▲ABC ~ ▲DFE, A = 30°, C = 50°, AB = 5 cm, AC = 8 cm and DF = 7.5 cm. Then, the following is true:

(A)DE = 12 cm, F = 50°

(B) DE = 12 cm, F = 100°

(C)EF = 12 cm, D = 100°

(D) EF = 12 cm, D = 30°

10. If in triangles ABC and DEF, $\dfrac{AB}{DE} = \dfrac{BC}{FD}$, then they will be similar, when

(A) $\angle B = \angle E$

(B) $\angle A = \angle D$

(C) $\angle B = \angle D$

(D) $\angle A = \angle F$

11. If ▲ABC ~ ▲QRP, $\dfrac{ar\,(ABC)}{ar\,(PQR)} = \dfrac{9}{4}$, AB = 18 cm and BC = 15 cm, then PR is equal to

(A)10 cm   (B) 12 cm   (C) $\dfrac{20}{3}$ cm   (D) 8 cm

12. If S is a point on side PQ of a ▲PQR such that PS = QS = RS, then

(A)PR . QR = RS^2

(B) $QS^2 + RS^2 = QR^2$

(C)$PR^2 + QR^2 = PQ^2$

(D) $PS^2 + RS^2 = PR^2$

CO-ORDINATE GEOMETRY

<u>BASIC CONCEPTS</u>

1. Distance Formula:-

The distance between two points A(x1,y1)and B (x2,y2)is given by the formula.

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

COROLLARY:-The distance of the point P(x,y) from the origin 0(0,0) is given by
OP=√(X-0)2+(Y-0)2   ieOP=√$X2+Y2$

2. Section Formula :-

The co-ordinates of the point P(x, y) which divides the line segment joining A(x1, y1) and B(x2,y2) internally in the ratio m:n are given by .

$$x = \frac{mx2 + nx1}{m+n} \quad y = \frac{my2 + ny1}{m+n}$$

3. Mid point Formula:-

If R is the mid-point, then m1=m2 and the coordinates of R are

$$R \left(\frac{x1+x2}{2}, \frac{y1+y2}{2} \right)$$

4. Co-ordinates of the centroid of triangle:-

The co-ordinates of the centroid of a triangle whose vertices are P(x1,y1),Q(x2,y2) and R(x3,y3) are

$$\left(\frac{x1+x2+x3}{3} \quad \frac{y1+y2+y3}{3} \right)$$

5. Area of a Triangle:-

The are a of the triangle formed a by the points P(x1,y1)Q(x2,y2) and R(x3,y3)is the numerical value of the expression.

ar(ΔPQR)=1/2 $\left[x1(y2-y3)+x2(y3-y1)+x3(y1-y2) \right]$