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Note:

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SUMMATIVE ASSESSMENT – II, 2012

SC - 2024

संकलित परीक्षा – II, 2012

SCIENCE / विज्ञान

Class – X / कक्षा - X

</div>

Time allowed : 3 hours   **Maximum Marks : 80**

निर्धारित समय : 3 घण्टे   **अधिकतम अंक : 80**

General Instructions :

(i)   The question paper comprises of **two Sections, A** and **B**. You are to attempt both the sections.

(ii)   **All** questions are **compulsory**.

(iii)   There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such questions is to be attempted.

(iv)   **All** questions of **Section-A** and **all** questions of **Section-B** are to be attempted separately.

(v)   Question numbers **1** to **4** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.

(vi)   Question numbers **5** to **13** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.

(vii)   Question numbers **14** to **22** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.

(viii) Question numbers **23** to **25** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.

(ix)   Question numbers **26** to **41** in **Section-B** are multiple choice questions based on practical skills. Each question is a **one mark** question. You are to select one most appropriate response out of the four provided to you.

सामान्य निर्देश :

(i)   इस प्रश्न पत्र को **दो भागों, भाग-अ और भाग-ब** में बांटा गया है। आपको दोनों भागों के प्रश्नों के उत्तर लिखने हैं।

(ii)   सभी प्रश्न **अनिवार्य** हैं।

(iii)   पूरे प्रश्न पत्र पर कोई चयन प्राप्त नहीं है, परन्तु पांच-पांच अंको के पाँच प्रश्नों में भीतरी चयन दिया गया है। इन प्रश्नों में आप केवल एक भीतरी चयन को उत्तर लिखने के लिए चुन सकते हैं।

(iv)   आपको **भाग-अ** और **भाग-ब** के सभी प्रश्नों के उत्तर पृथक-पृथक लिखने होंगे।

(v)   **भाग-अ** के प्रश्न संख्या **1** से **4** के प्रश्न **एक-एक अंक** के हैं। इनके उत्तर **एक शब्द** अथवा **एक वाक्य** में दें।

(vi)   **भाग-अ** के प्रश्न संख्या **5** से **13** के प्रश्न **दो-दो अंकों** के हैं। इनके उत्तर लगभग **30 शब्दों** में देने हैं।

(vii)   **भाग-अ** के प्रश्न संख्या **14** से **22** के प्रश्न **तीन-तीन अंकों** के हैं। इनके उत्तर लगभग **50 शब्दों** में देने हैं।

(viii) **भाग-अ** के प्रश्न संख्या **23** से **25** के प्रश्न **पाँच-पाँच अंकों** के हैं। इनके उत्तर लगभग **70 शब्दों** में देने हैं।

(ix)   **भाग-ब** के प्रश्न संख्या **26** से **41** के प्रश्न प्रयोगात्मक कौशल पर आधारित बहुविकल्पी प्रश्न हैं। प्रत्येक प्रश्न **एक अंक** का है। दिए गये चार विकल्पों में से आपको केवल एक सबसे उपयुक्त विकल्प चुनना है।

SECTION – A

1. Draw the electron dot structure of Nitrogen molecule. 1

ZmBQ´>moOZ -AUw H$s Bbo³Q´>mo°Z - {~ÝXþ g§aMZm It{ME&

2. State the nature of the image formed at the retina of human eye. 1

'mZd ZoÌ Ho$ ao{Q>Zm (Ñ{ï>nb) na ~Zo à{V{~å~ H$s àH¥$\${V H$m CëboI H$s{OE&

3. Define ecosystem. 1

nm[aV§Ì H$s n[a^mfm {b{IE &

4. In the following food chain 40J of energy was available to the Hawks. 1
How much energy would have been present in the plants ?
Plants→ Rats→ Snakes→ Hawks

ZrMo Xr J¶r ImK ûm¥§Ibm '| ~mO H$mo 40J D$Om© CnbãY Wr&
nm¡Ym| _| {H$VZr D$Om© hmoZr Mm{hE?

nm¡Yo → Myho → gm±n → ~mµO

5. State moderns periodic law on which side of the periodic table do you find 2
(i) metals (ii) non-metals ?

AmYw{ZH$ AmdV© {Z¶' {b{IE & AmdV© gmaUr Ho$ {H$g Amoa
(i)YmVw (ii)AYmVw nmE OmVo h¡§?

6. The atomic radii of three elements A, B and C of a periodic table are 186pm, 104pm 2
and 143pm respectively. Giving a reason, arrange these elements in the increasing
order of atomic numbers in the period.

VrZ VËdm| A,, B VWm C H$s na'mUw {ÌÁ¶m H«$'e…186pm, 104pm
VWm 143pm h¡& H$maU ñnï> H$aVo hþE BZ VËdm| H$mo AmdV©
'| BZH$s na'mUw g§»¶m Ho$ Amamohr H«$' '| ì¶dpñWV H$s{OE&

7. (a) What is the fate of the ovules and the ovary in a flower after fertilization ? **2**
(b) How is the process of pollination different from fertilization ?

(a) {ZfoMZ Ho$ níMmV {H$gr nwîn '| ~rOmÊS> VWm AÊS>me¶
H$m ³¶m hmoVm h¡?

(b) {ZfoMZ H$s à{H«$¶m namJU go {H$g àH$ma {^Þ hmoVr h¡?

8. Write two functions each of : 2
(a) Testis
(b) Ovaries

(a) d¥fU
(b) AÊS>me¶

àË¶oH$ Ho$ Xmo-Xmo H$m¶© {b{IE &

9. The radius of curvature of concave mirror is 50cm. Where should an object be 2
placed from the mirror so as to form its image at infinity ? Justify your answer.

{H$gr AdVb Xn©U H$s dH«$Vm {ÌÁ¶m 50cm h¡& {H$gr {~å~ H$mo

Xn©U Ho$ gm'Zo H$hm° aI| {H$ CgH$m à{V{~å~ AZÝV na ~Zo&
AnZo CÎma H$s nw{ï> H$s{OE&

10. (a) What is the near point of the human eye with normal vision ?　　　　　2
(b) Why is a normal eye not able to see clearly the objects placed closer than the near point ?
(a) gm'mÝ¶ Ñ{ï> Ho$ 'mZd ZoÌ H$m {ZH$Q> {~ÝXþ ³¶m hmoVm h¡ ?
(b) gm'mÝ¶ ZoÌ {ZH$Q> {~ÝXþ go H$$' Xÿar na pñWV dñVwAm| H$mo ñnï> ³¶m| Zht XoI nmVm?

11. The sun appears oval (or flattened) at sunrise and sunset, but appears circular at noon. Explain, why ?　　2
gy¶m}X¶ VWm gy¶m©ñV Ho$ g'¶ gy¶© AÊS>mH$ma (AWdm MnQ>m) àVrV hmoVm h¡ O~{H$ Xmonha Ho$ g'¶ Jmob àVrV hmoVm h¡& ì¶m»¶m H$s{OE Eogm ³¶m| hmoVm h¡ ?

12. List four disadvantages of burning fossil fuels ?　　　　2
Ordí_r BªYZ H$mo ObmZo H$s Mma hm{Z¶m| H$s gyMr ~ZmBE&

13. List four stakeholders of forests.　　　　2
dZm| Ho$ Mma XmdoXmam| H$s gyMr ~ZmBE&

14. (a) (i) Identify the product (A) formed in the following reaction-　　　　3
$$CH_3CH_2OH \xleftarrow[\text{Conc.}H_2SO_4]{443\ K} A + H_2O$$

(b) What is the function of Concentrated Sulphuric acid in the above reaction ? Define functional group.

(a) (i) ZrMo Xr J¶r amgm¶{ZH$ A{'{S´>¶m '| ~ZZo dmbo CËnmX (A) H$mo nhMm{ZE -
$$CH_3CH_2OH \xleftarrow[\text{सांद्र}\ H_2SO_4]{443\ K} A + H_2O$$

(b) CnamoŠV A{^{H«$>¶m '| gm§Ð> H_2SO_4 H$m ³¶m H$m¶© h¡ ?
(c) àH$m¶m©Ë'H$ g'yh H$s n[a^mfm {b{IE&

15. An atom has electronic Configuration 2, 8,2　　　　3
(a) What its the atomic number of this element ?
(b) What is in Valency ?
(c) To which of the following element would it be chemically similar and why ? (Atomic numbers are given in parentheses) Be (4), O (8), justify your answer.
{H$gr na'mUw H$m Bbo³Q´>moZ {dÝ¶mg 2, 8,2 h¡&
(a) Bg VÎd H$s na'mUw g§»¶m ³¶m h¡ ?
(b) BgH$s g§¶moOH$Vm ³¶m h¡ ?
(c) ¶h amgm¶{ZH$ Ñ[ï> go ZrMo {XE JE {H$g VÎd Ho$ g'mZ h¡ Am¡a ³¶m| ? (na'mUw) g§»¶m H$moï>H$ '| Xr J¶r h¡ Be (4); O (8), AnZo CÎma H$s nwï{> H$s{OE&

16. (a) Mention two secondary sexual characters in human male.
(b) Why testes in male body are extra-abdominal ?

(c)   Write the dual purpose served by urethra in males.

(a)   _mZd Za Ho$ Xmo {ÛVr¶H$ ¶m¡Z bjUm| H$m CëboI H$s{OE&

(b)   'mZd Za '| d¥fU CXa Jwhm Ho$ ~mha ³¶m| hmoVo h¢?

(c)   'mZd Za '| 'yÌ_mJ© Ûmam {H$E OmZo dmbo Xmo H$m¶© {b{IEŸ&

17. (a) Define genetics.   3
     (b) Who is regarded as the 'Father of Genetics' ? Name the plant on which he performed his experiments.
     (c) Why did he select that specific plant for his experimental studies ?

     (a) AmZwd§[eH$s ³¶m h¡?

     (b) 'AmZwd§{eH$s H$m OZH$' {H$Ýh| 'mZm OmVm h¡? Cg nmXn H$m Zm' {b{IE {Og na CÝhmo§Zo AnZo à¶moJ {H$E Wo&

     (c) CÝhmo§Zo AnZo àm¶mo{JH$ AÜ¶¶Zm| Ho$ {bE Bgr {d[eï> nmXn H$mo ³¶m| MwZm?

18. (a) Name the unit of inheritance. What is its function ?   3
     (b) How are inherited traits different from acquired traits ? Give example.

     (a) d§emZwJV H$s BH$mB© H$m Zm' {b{IE& BgH$m ³¶m H$m¶© h¡ ?

     (b) Cnm{O©V bjU d§emZwJV bjUm| go {H$g àH$ma {^Þ hmoVo h¡§? CXmhaU Xr{OE&

19. (a)   What are fossils ? How do we know how old the fossils are ?   3
     (b)   State two differences between Homologues organs and Analogous organs.

     (a)   Ordmí' ³¶m h¡§? h' ¶h H¡$go kmV H$aVo h¢ {H$ Ordmí' {H$VZo nwamZo h¡§?

     (b)   g'OmV A§J VWm g'ê$n A§J '| Xmo AÝVam| H$m CëboI H$s{OE&

20. (a) Name and define the S.I. unit of power of a lens.   3
     (b) How is the power of a lens related to its focal length ? Find the power of a concave lens of focal length 25cm.

     (a) b§og H$s j_Vm Ho$ S. I. 'mÌH$ H$m Zm' Ed§ CgH$s n[a^mfm {b{IE&

     (b) {H$gr b|g H$s j'Vm VWm CgH$s '$moH$g Xÿar '| ³¶m g§~§Y h¡? Cg CÎmb b|g H$s j'Vm kmV H$s{OE   {OgH$s \$moH$g Xÿar 25cm h¡&

21. (a) State Snell's law of refraction.   3
     (b) What is the speed of light in a transparent medium which has a refractive index of 1.7 (the speed of light in vacuum is 3×10 m/s)

     (a) ñZob H$m AndV©Z H$m {Z¶' {b{IE&

     (b) Cg nmaXeu 'mÜ¶' '| n«H$me H$s Mmb kmV H$s{OE {OgH$m AndV©Zm§H$ 1.7 h¡?

         ({Zdm©V '| àH$me H$s Mmb $= 3x10^8$ m/s)

22. A student has difficulty in reading the black board while sitting in the last row 3

What could be the defect the student is suffering from ? How can it be corrected ? Draw the ray diagrams for (a) defective eye (b) its correction.

{H$gr N>mÌ H$mo H$jm '| A§{V' n§{º$ 'o§ ~¡Q>Zo na ídm'nÅ> na {bIo eãXm| H$mo ñnï> XoI nmZo '| H$${R>ZmB© hmoVr h¡& dh {H$g Ñ{ï> Xmof go nr{S>V hmo gH$Vm h¡? BgH$m g§emoYZ {H$g àH$ma {H$¶m Om gH$Vm h¡?

(a) Xmof¶wŠV ZoÌ VWm (b) g§emo{YV ZoÌ Ho$ {bE {H$aU AmaoI H$s{OE&

23. Answer the following question : 5
    (a) Write the name of the functional group in CH_3COCH_3
    (b) An organic compound burns with a sooty flame. Is it saturated or unsaturated hydrocarbon ?
    (c) Giving balanced equation state how you will convert methane to carbon dioxide.
    (d) Why does micelle formation take place when soap is added to water ? Will a micelle be formed in all types of solvents ? Justify your answer.

ZrMo {XE àíZm| Ho$ CÎma {b{IE -

(a) CH_3COCH_3 _| CnpñWV àH$m¶m©Ë'H$ g'yh H$m Zm' {b{IE&

(b) H$moB© H$m~©Z ¶m¡{JH$ H$m{bI dmbr Ádmbm Ho$ gmW ObVm h¡& ¶h hmoBS´>moH$m~©Z g§V¥á h¡ AWdm Ag§V¥á?

(c) g§Vw{bV g'rH$aU Ûmam C,,oI H$s{OE {H$ 'oWoZ H$mo H$m~©Z S>mBAm°³gmBS> '| {H$g àH$ma n[ad{V©V {H$¶m OmVm h¡&

(d) Ob '| gm~wZ H$mo {'bmZo na {'gob H$m {Z'm©U {H$g àH$ma hmoVm h¡? ³¶m g^r àH$ma Ho$ {dbm¶H$m| Ho$ gmW {'gob H$m {Z'm©U hmoJm? CÎma H$s nw{ï> H$s{OE&

OR/AWdm

(a) Draw the structure of Bromopentane.
(b) Name the Catalyst Commonly used in the process of conversion of vegetable oil into fats(vegetable ghee).
(c) With the help of an activity describe esterification process using ethanol and ethanoic acid.

(a) ~«mo_monoYQ>oZ H$s g§aMZm It{ME&

(b) dZñ{V Vobm| H$mo dgm (dZñ{V Kr) 'o§ ê$nmÝV[aV H$aZo H$s à{H«$¶m '| gm'mÝ¶V… Cn¶moJ {H$E OmZo dmbo CËàoaH$ H$m Zm' {b{IE &

(c) {H$gr [H«$¶mH$bmn H$s ghm¶Vm go EWoZm°b VWm EWoZm°BH$ Aåb Ho$ Cn`moJ Ûmam EñQ>arH$aU à{H«$¶m H$m dU©Z H$s{OE&

24. (a) List two advantages of sexual reproduction over asexual reproduction. 5
    (b) Name the type of asexual reproduction seen in :
        (i) Plasmodium (ii) Planaria
    (c) Draw a diagram of Rhizopus showing the location of :
        (i) Sporangium (ii) Rhizoidal hyphae.
    (d) How will an organism be benefited if it reproduces through spores ?

(a)Ab¢{JH$ OZZ H$s VwbZm '| b¢{JH$ OZZ Ho$ Xmo bm^ H$s gyMr ~ZmBE&

(b) ZrMo {XE JE Ordm| '| {XImB© XoZo dmbo Ab¢{JH$ OZZ Ho$ àH$ma H$m Zm' {b{IE-

   (i) ßb¡Á'mo{S>¶'   (ii) ßb¡Zo[a¶m

(c) amBµOmong H$m AmaoI Ir§MH$a {ZåZ{b{IV H$s pñW{V Xem©BE -

   (i) ewÕ ~rOmUwYmZr   (ii) amBµOmong H$m H$dH$ Omb

(d) ~rOmUw Ûmam OZZ go Ord {H$g àH$ma bm^mpÝdV hmoVm h¡?

OR/AWdm

(a) Draw a diagram to show human male reproductive system and label the following organs- seminal vesicle, prostate gland, vas deferens, penis.

(b) List two contraceptive methods and state two benefits of adopting these methods.

(a)   'mZd Za OZZ V§Ì H$m AmaoI ItMH$a ZrMo {XE JE ^mJ Zm'm§{H$V H$s{OE -

   ewH«$me`, àmoñQ>oQ> J«§{W, ewH«$dm{hZr {eíZ$

(b)   Xmo J^©©{ZamoYH$$ {d{Y¶m| H$s gyMr ~ZmBE VWm BZ {d{Y¶m| H$mo AnZmZo Ho$ Xmo bm^ {b{IE&

25. (a) Two lenses have power of (i) 2D (ii) – 4D. State the nature and focal length of each lens.   5

(b) A concave lens has focal length of 20 cm. At what distance from the lens a 5cm tall object be placed so that it forms an image at 15cm from the lens ? Also calculate the size of the image formed.

(a) Xmo b|gm| H$s j'VmE§ (i) 2D (ii) – 4D h¢ & BZ| àË¶oH$ b|g H$s àH¥$${V VWm \$moH$g Xÿar H$m C„«oI H$s{OE&

(b) {H$gr AdVb b|g H$s 'moHg Xÿar 20 cm h¡& {H$gr 5cm bå~o {~å~ H$mo Bg bo§g go {H$VZr Xÿar na aI| {H$ CgH$m à{V{~å~ b|g go 15cm Xÿar na ~Zo&

OR/AWdm

(a) Name the type of mirror used in the following :
 (i) Headlights of a car.
 (ii) Rear view mirror of a vehicle.
    Support your answer with reason.

(b) When an object is placed at a distance of 60cm from a diverging spherical mirror, the magnification produced is 0.5. Where should the object be placed to get a magnification of $\frac{1}{3}$?

(a) {ZåZ{b{IV '| Cn¶moJ hmoZo dmbo Xn©Um| Ho$ Zm' Ed§ àH$ma {b{IE :

   (i) H$ma H$s h¡S>bmBQ> (ii) dmhZm| '| nrN>o H$m Ñí¶ XoIZo Ho$ {bE Jm Xn©U AnZo CÎma H$s H$maU g{hV   nw{ï> H$s{OEŸ&

(b) O~ {H$gr {~å~ H$mo {H$gr Angmar Xn©U Ho$ gm'Zo 60cm Xÿar na aIVo h¢ Vmo ~ZZo dmbo à{V{~å~ H$m

AmdY©Z 0.5 <mark>hmoVm</mark> h¡& Bg {~å~ H$mo Bgr Xn©U Ho$ gm'Zo H$hm± na aIm OmE {H$ $\frac{1}{3}$ AmdY©Z àmá hmo?

SECTION-B / ^mJ - ~

26. An iron nail was kept immersed in aluminum sulphate solution. After about an 1 hour, it was observed that
    (a)   The colourless solution changes to light green.
    (b)   The solution becomes warm.
    (c)   Grey metal is deposited on the iron nail.
    (d)   The solution remains colorless and no deposition is observed on iron nail.
    {H$gr bmoho H$s H$sb H$mo Eobw{'Z¶' gë'o$Q> {db¶Z '| Sw>~moH$a aIm J¶m& bJ^J EH$ KÝQ>o Ho$ níMmV àojU H$aZo na ¶h nm¶m J¶m {H$:
    (a)   a§JhrZ {db¶Z hëH$m ham hmo J¶m &
    (b)   {db¶Z hëH$m J_© hmo J¶mŸ&
    (c)   bmoho H$s H$sb na Kyga naV O' J¶r&
    (d)   {db¶Z a§JhrZ hr ahm VWm bmoho H$s H$sb na H$moB© naV Zht O_t&

27. Zinc granules were added to Zinc sulphate copper sulphate, aluminium sulphate and iron sulphate solution as shown below. A student would observes the deposition of metal on zinc in beakers :
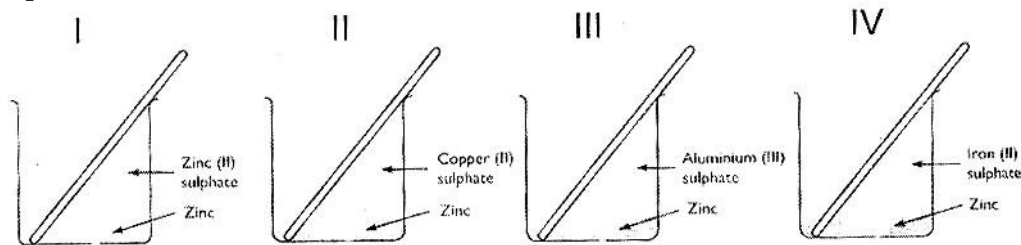
    (a)   I and III   (b)   I and II   (c)   II and IV   (iv)   III and IV

    {MÌ '| Xem©E AZwgma qOH$ gë'o$Q>, H$m°na gë'o$Q>, Eobw§{'{Z¶' gë'o$Q> VWm Am¶aZ gë'o$Q> {db¶Zm| '| qOH$ H$s H${UH$mE§ S>mbr J¶t & H$moB© N>mÌ qOH$ H$s H${UH$mAm| na YmVw H$s naV H$m {ZjonU {H$Z ~rH$am| '| XoIoJm?
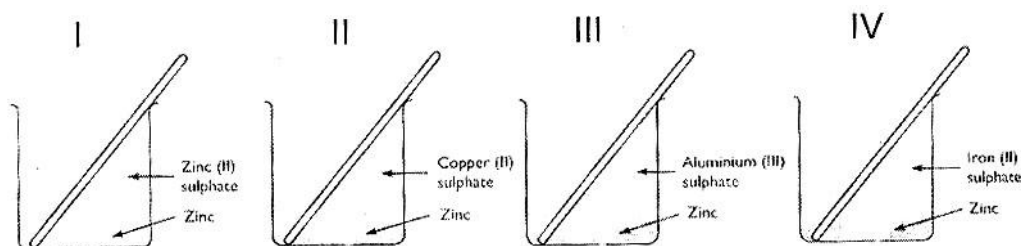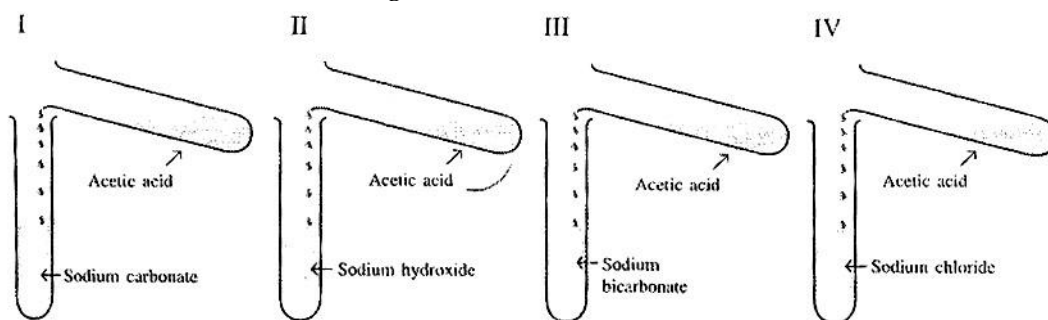

    (a)   I and III   (b)   I and II   (c)   II and IV   (iv)   III and IV

28. About 2mL of acetic acid was taken in each of the three test tubes P, Q and R and 1 5mL, 10mL and 15mL of distilled water were added to them respectively.

Instantaneously a clear solution is observed in the test tubes :
(a) (P) and (Q) only   (b) (Q) and (R) only
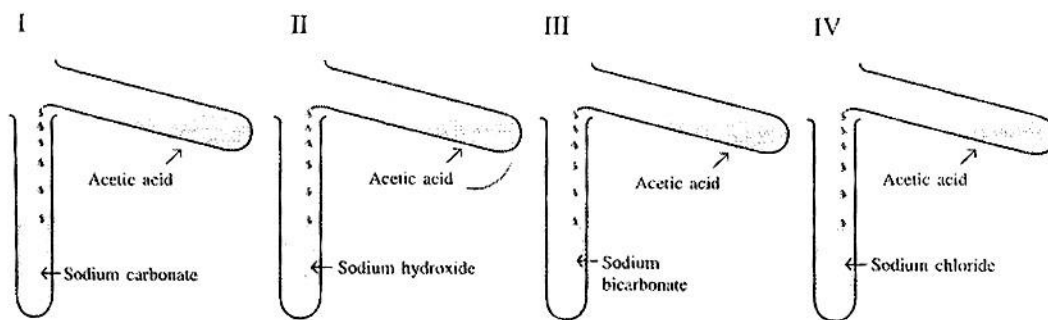(c) (R) and (P) only   (d) (P), (Q) and (R)

VrZ naIZ{b¶m| P, Q VWm R àË¶oH$ '| bJ^J 2mL Eogr{Q>>H$ Aåb
boH$a CZ_|| H«$_e… 5mL, 10mL, 15mL AmgwV Ob {'bm¶m J¶m& Cgr
jU ñnï> {db¶Z {OZ naIZ{b¶m| '| ~Zm do h¢ :
(a) Ho$db (P) VWm (Q)
(b) Ho$db (Q) VWm (R)
(c) Ho$db R VWm (P)
(d) (P), (Q) VWm (R) VrZm|

29.   Four students performed experiments of acetic acid with sodium carbonate (I), the **1**
       sodium hydroxide (II), sodium bicarbonate (III) and sodium chloride
       (IV) separately. Each one brought burning candle near the mouth of the test tube.
       The candle would not be extinguished near the mouth of the test tubes_____

(a)   I and II   (b)   I and III   (c)   II and III   (d)   II and IV

Mma N>mÌm| Zo :
(I) gmo{S>¶' H$m~m}ZoQ>,
(II) gmo{S>¶' hmBS´>m°³gmBS>,
(III) gmo{S>¶' ~mBH$m~m}ZoQ>, VWm
(IV) gmo{S>¶' ³bmoamBS> go n¥WH$ -n¥WH$ Eogr{Q>H$ Aåb H$s
A{^[H«$¶m H$am¶r& Mmam| naIZbr Ho$ 'wI na ObVr 'mo'~Îmr
bmE>& {OZ naIZ{b`m| Ho$ 'wI na 'mo'~Îmr H$s Ádmbm ~wP,
OmEJr do h¢ >&

(a)   I Ed§ II   (b)   I Ed§ III   (c)   II Ed§ III
(d)   II Ed§ IV

30.   When ethanoic acid is added to a solution of substance X, colourless and odourless 1

gas Y is liberated. The gas Y turns lime water milky. The substance X is :
(a) Sodium hydrogen Carbonate
(b) Sodium hydroxide
(c) Sodium acetate
(d) Sodium chloride.

O~ {H$gr nXmW© X Ho$ {db¶Z '| EWoZm°BH$ Aåb {'bm¶m J¶m Vmo H$moB© a§JhrZ d J§YhrZ J¡g Y {ZH$br & J¡g Y Zo MyZo Ho$ nmZr H$mo Xÿ{Y¶m H$a {X¶m& nXmW© X h¡ -
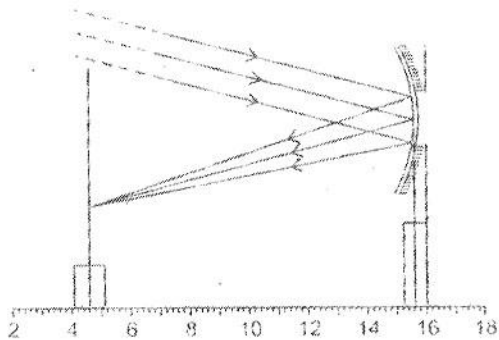(a) gmo{S>¶' hmBS´>moOZ H$m~m}ZoQ>
(b) gmo{S>¶' hmBS´>m°³gmBS>
(c) gmo{S>¶' EogrQ>oQ>
(d) gmo{S>¶' ³bmoamBS>

31. The focal length of the concave mirror in the experimental set up, shown below **1** equals :
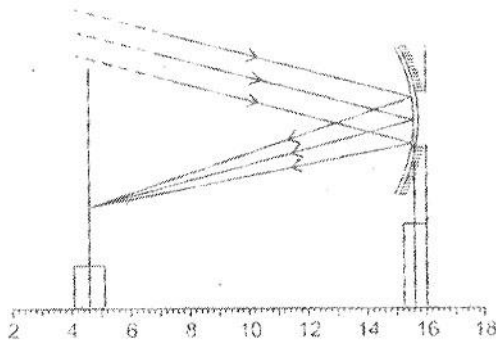
(a)   10.3cm   (b)   11.0cm   (c)   11.7 cm   (d)   12.2cm

ZrMo Xem©`r J`r àm¶mo{JH$ ì¶dñWm '| AdVb Xn©U H$s '$moH$g Xÿar h¡-

(a)   10.3cm   (b)   11.0cm   (c)   11.7 cm   (d)   12.2cm

32. The teacher asks a student to fix the given screen at an appropriate place in the given experimental set up, so that a clear image can be obtained on the screen. If the focal length of convex lens in 8 cm, the mark on the scale at which he should fix up the screen is _____   **1**

         (cm)
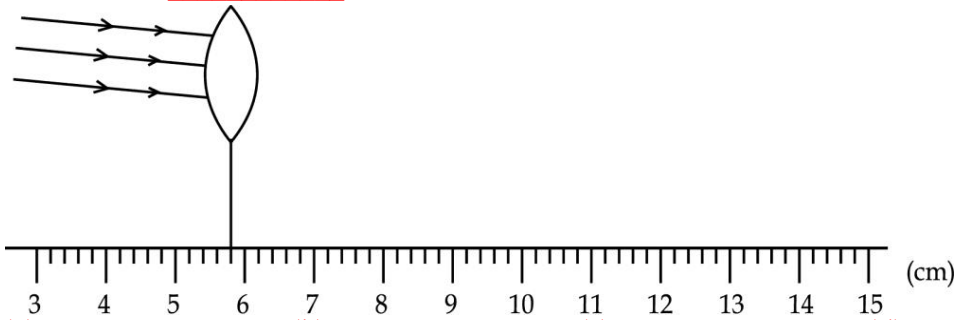
(a)   12.8 cm   (b)   13.0 cm   (c)   8 cm   (d)   13.8 cm

एक अध्यापक ने अपने छात्रों से नीचे दिखाए गए प्रायोगिक सैट–अप में स्क्रीन को उस स्थान पर रखने के लिए कहा जहाँ वस्तु का स्पष्ट प्रतिबिम्ब प्राप्त हो सके। यदि लैंस की फोकस दूरी 8 cm हो तो उसे स्क्रीन को स्केल के जिस पाठ्यांक पर रखना चाहिए वह है –

         (cm)
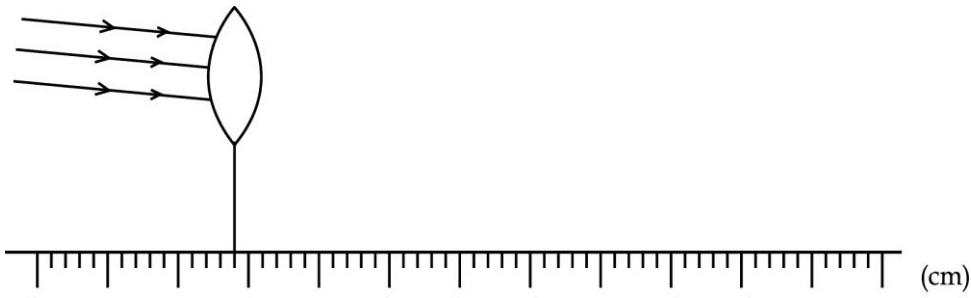
(a)   12.8 cm   (b)   13.0 cm   (c)   8 cm   (d)   13.8 cm

33. Out of the following objects which one would you prefer to determine the focal length of a given convex lens by focusing to its image or a screen ?
(a) A burning candle placed on the far end of a lab table
(b) Grills of the laboratory window
(c) A tall tree visible from the laboratory window
(d) Sun rays entering the laboratory through its window.

ZrMo {XE JE {~å~m| '| go Amn {H$go {~å~ Ho$ ê$n ngÝX H$aHo$ Vm{H$ Amn CgHo$ à{V{~å~ H$mo {XE JE CÎmb b|g Ûmam nX} na '$moH$${gV H$a b|g H$s '$moH$$g Xÿar kmV H$a| ?

(a) à¶moJembm H$s _oμO Ho$ X²ya dmbo {gao na aIr ObVr 'mo'~Îmr &

(b) à¶moJembm H$s {I‹S>H$s H$s {J«b&

(c) à¶moJembm H$s {I‹S>H$s go {XImB© XoZmo dmbm D±$Mm d¥j&

(d) à¶moJembm H$s {I‹S>H$s go àdoe H$aZo dmbr gy¶©© H$s [H$aU| &

34. While performing the experiment on tracing the path of a ray of light passing through a glass slab as shown in the given diagram, four students interpreted the results as given below. Which one of the four interpretations is correct ?   **1**
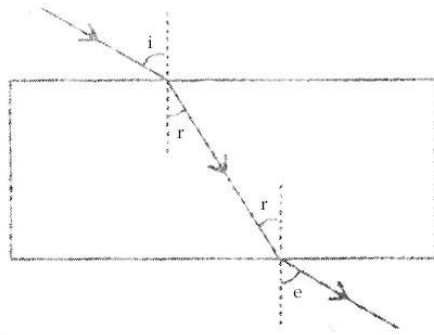
(a)   ∠r > ∠e   (b)   ∠r = ∠e   (c)   ∠i = ∠r   (d)   ∠i > ∠r

ZrMo {MÌ '| Xem©E AZwgma {H$gr H$m§M Ho$ ñb¡~ go JwOaZo dmbr àH$me {H$aU H$m nW Amao{IV H$aZo H$m à¶moJ H$aVo g'¶ Mma N>mÌm| Zo n{aUm_m| H$s {^Þ -{^Þ ì¶m»¶mE± H$s¨ & BZ Mma ì¶m»¶mAm| _| go H$m¡Z gr ghr h¡?
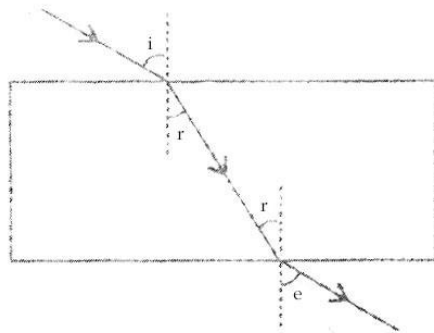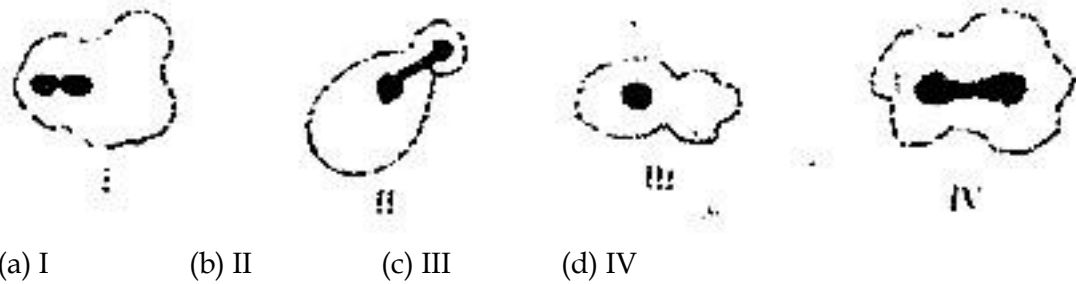

(a)   ∠r > ∠e   (b)   ∠r = ∠e   (c)   ∠i = ∠r   (d)   ∠i > ∠r

35.   On the basis of their experiment to trace the path of a ray of light passing though   1 glass slab, four students arrived at the following conclusions. Select the correct conclusion.
(a) Angle of incidence is greater than the angle of emergence
(b) Angle of emergence is less than the angle of refraction
(c) Emergent ray is parallel to the incident ray.
(d) Emergent ray is parallel to the refracted ray.

AnZo - AnZo à¶moJ Ho$ AmYma nwa H$m§M Ho$ ñb¡~ go JwOaZo dmbr àH$me {H$aU H$m nW Amao{IV H$a Mma N>mÌm| Zo {ZåZ{b{IV {ZîH$f© {ZH$mbo & BZ'o H$m¡Z gm {ZîH$f© ghr h¡?
(a) AmnVZ H$moU {ZJ©V H$m¡U go Am{YH$ h¡&   (b)   {ZJ©V H$moU AndV©Z H$moU go N>moQ>m h¡&
(c) {ZJ©V [H$aU Amn{VV {H$aU Ho$ g'mÝVa h¡&   (d)   {ZJ©V [H$aU And{V©V {H$aU Ho$ g'mÝVa h¡&

36.   Which stage out of those marked I, II, III and IV is showing binary fission in   **1** Amoeba ?

(a) I   (b) II   (c) III   (d) IV

ZrMo {XE JE Mma MaUm| I, II, III VWm IV, 'o§ go {H$g MaU '|
A_r~m '| {Û>IÊS>Z Xem©¶m J¶m h¡&

(a) I   (b) II   (c) III   (d) IV
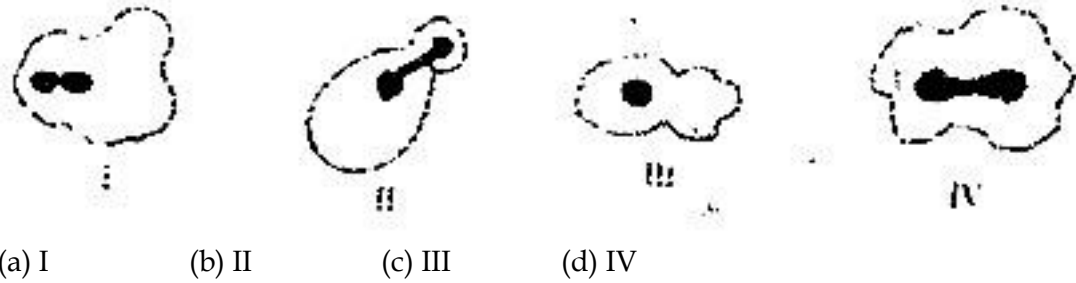
37. A student is given a permanent slide showing binary fission in Amoeba. The **1** following are the steps in focusing the object under the microscope, which are not in proper sequence-

(i) Place the slide on the stage; look through the eyepiece and adjust the mirror and diaphragm to get even illumination.

(ii) Look through the eyepiece and raise the objective using coarse adjustment until the object is focused.

(iii) Make the focus sharp with the help of fine adjustment.

(iv) Look through the eyepiece and move the slide until the object is visible.

The proper sequence of steps is :

   (a) (i), (iii), (iv), (ii)   (b) (ii), (iii), (iv), (i)

   (c) (iv), (iii), (ii), (i)   (d) (i) (iv), (ii), (iii)

{H$gr N>mÌ H$mo A_r~m 'o§ {ÛIÊS>Z Xem©Zo dmbr ñWm`r ñbmBS> Xr J¶r h¡& ZrMo Bg ñbmBS> H$mo gyú'Xeu '| '$moH$${gV H$aZo Ho$ Hw$N> MaU {XE JE h¡ Omo C{MV H«$' 'o§ Zht h¡§&

(i) ñbmBS> H$mo '§M na a{IE, Zo{ÌH$m go Xo{IE VWm Xn©U VWm S>m¶m\«$m_ H$mo g'm¶mo{OV HaHo EH$g'mZ àH$me àmá H$s{OE&

(ii) Zo{ÌH$m '| Xo{IE VWm ñWyb g'm¶moOZ H$mo Cn¶moJ H$aHo$ A{^Ñí¶H$ H$mo BVZm CR>mBE {H$ q~å~ {XImB© XoZo bJo&

(iii) gyú' g'm¶moOZ Ûmam 'moHg H$mo VrúU ~ZmBE &

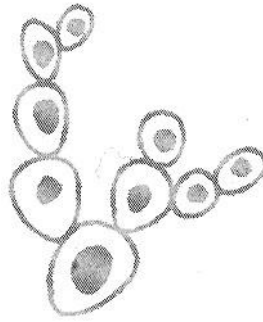(iv) Zo{ÌH$m 'o§ Xo{IE VWm ñbmBS>> H$mo BVZm {IgH$mBE {H$ {~å~ {XImB© XoZo bJo &

BZ MaUm| H$m C{MV H«$' h¡&

   (a) (i), (iii), (iv), (ii)   (b) (ii), (iii), (iv), (i)

   (c) (iv), (iii), (ii), (i)   (d) (i) (iv), (ii), (iii)
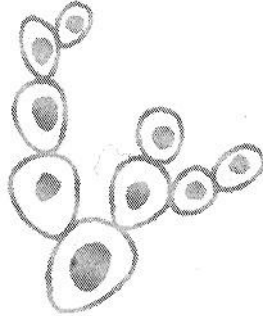
38. Following figure represents the reproduction in :   **1**

(a) Amoeba   (b) Yeast   (c) Plasmodium   (e) Hydra

ZrMo Xem©¶m J¶m {MÌ {H$g'o§ OZZ H$m {Zê$nU H$aVm h¡?

(a)   A_r~m   (b)   ¶rñQ>   (c)   ßb¡µÁ'mo{S>¶'
(e)   hmBS´>m

39. The shape of yeast cell in :
(a) spherical only
(b) oval only
(c) both spherical and oval
(d) irregular
¶rñQ> - H$mo{eH$m H$s AmH¥$${V hmoVr h¡-
(a) Ho$db Jmob
(b) Ho$db AÊS>mH$ma
(c) Jmob VWm AÊS>mH$ma XmoZm|
(d) A{Z¶{'V

40. At the end of the experiment, 'to determine the percentage of water absorbed by raisins', the raisins are gently wiped just before weighing. This is to ensure that :   1
(a) hands do not get wet.
(b) the raisins lose water before weighing.
(c) only water absorbed by raisins is weighed.
(d) the weighing scale does not get wet.

à¶moJ "{H$e{'em| Ûmam Ademo{fV Ob H$s à{VeVVm {ZYm©[aV
H$aZm" Ho$ A§{V' MaUm| '| ^rJr {H$e{'em| H$mo VmobZo go
R>rH$ nhbo Yrao go nm|N>Vo h¢Ÿ& Eogm ¶h gw{ZpíMV H$o
{bE {H$¶m OmVm h¡ {H$:
(a) hmW Jrbo Zht hm|
(b) VmobZo go nyd© {H$e{'e Ob Imo X|
(c) Ho$db {H$e{'em| Ûmam Ademo{fV Ob hr Vwbo
(d) Vwbm H$m nb‹S>m Jrbm Z hmo &

41. While performing an experiment to determine the percentage of water absorbed **1**
by raisins, the following data was obtained :
Mass of water taken in the beaker= 15.g
Mass of raisins before soaking them in water = 200mg
Mass of raisins after soaking in water for 2 hours = 250 mg
Mass of water left in the beaker =12g
The percentage of water absorbed by raisins would be :
(a) 20%   (b) 25%   (c) 40%   (d) 50%

{H$e{'em| Ûmam Ademo{fV Ob H$s à{VeVVm kmV H$aVo g'¶
{ZåZ{b{IV Am§H$S>o àmá hþE :
~rH$a '| {bE Ob H$m Ðì¶'mZ = 15.g
{H$e{'em| H$m {^JmoZo go nyd© Ðì¶'mZ = 200mg
Xmo KÝQ>o Ob '| {^JmZo na {H$e{'em| H$m Ðì¶'mZ = 250mg
~rH$a '| ~Mo Ob H$m Ðì¶'mZ = 12 g
{H$e{'em| Ûm‹am Ademo{fV Ob H$s à{VeVVm h¡-
(a) 20%   (b) 25%   (c) 40%   (d) 50%

- o 0 o -