

SUMMATIVE ASSESSMENT - II (2015-16)
SCIENCE
Class - X/

Time allowed : 3 hours

Maximum Marks : 90

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 choice in any of the questions.
- (iv) **All questions of Section-A and all questions of Section-B** are to be attempted separately.
- (v) Question numbers **1 to 3 in Section-A** are **one mark** questions. These are to be answered in **one word or in one sentence.**
- (vi) Question numbers **4 to 6 in Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
- (vii) Question numbers **7 to 18 in Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
- (viii) Question numbers **19 to 24 in Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- (ix) Question numbers **25 to 33 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.
- (x) Question numbers **34 to 36 in Section-B** are questions based on practical skills. Each question is a **two mark** question.

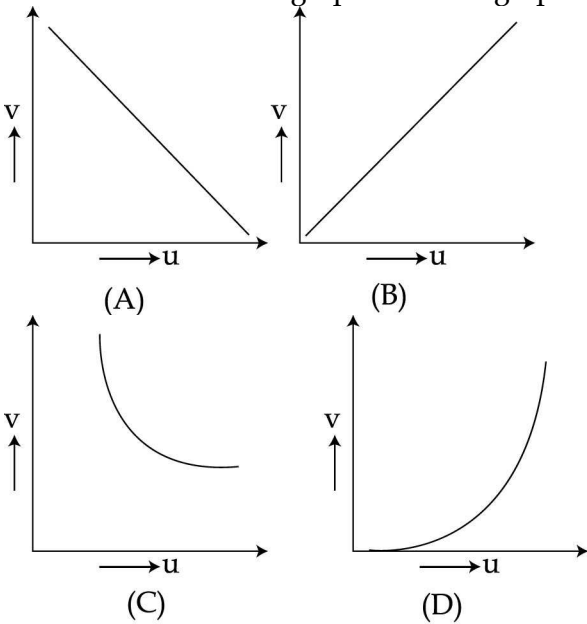
SECTION-A

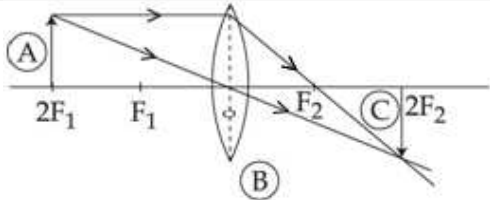
1	Write molecular formula of alcohol which can be derived from butane.	1
2	How do we come to know that organisms had a common ancestors ?	1
3	Write the context in which Amrita Devi Bishnoi National award is given.	1
4	.What is presbyopia ? State its cause.	2
5	List four products produced by burning of coal.	2
6	Accumulation of harmful chemicals in our bodies can be avoided. Explain how this can be achieved.	2
7	Write the structural formula and IUPAC name of the following : (i) A carboxylic acid with four carbon atoms (ii) An alkyne with three carbon atoms (iii) An alcohol having one carbon atom	3

8	What are metalloids ? Where are they placed in the periodic table ? Give two examples of metalloids.	3
9	How can a carboxylic acid and an alcohol be distinguished using their chemical property. Write any three differences.	3
10	(a) Name the element with atomic number 13 (b) To which group does it belong ? (c) To which period does it belong ? (d) Write its electronic configuration.	3
11	All human races like Africans, Asians, Europeans, Americans and others look so different from each other still they belong to the same species. Give three points to justify the statement.	3
12	DNA content has the tendency to double itself during sexual reproduction due to combining of the genetic materials from two parents. How can the problem of DNA doubling be solved to maintain the consistency of the genetic material throughout the species ?	3
13	Explain three factors which can lead to rise of new species.	3
14	Name the type of asexual reproduction demonstrated by the following organisms : (a) Amoeba (b) Rhizopus (c) Planaria (d) Plasmodium (e) Spirogyra (f) Bryophyllum	3
15	What happens when the following situations are initiated : (a) A <i>Planaria</i> is cut into three different pieces. (b) Leaf of the <i>Bryophyllum</i> with notches falls on the soil. (c) Testosterone is released in the male reproductive system	3
16	(a) With the help of a suitable diagram explain why the sun is visible to us two minutes before the actual sunrise and two minutes after the actual sunset. (b) Name the phenomenon responsible for apparent flattening of the sun's disc at sunrise and sunset.	3
17	A 10 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 30 cm. The distance of the object from the lens is 20 cm. Find the position, nature and size of the image formed.	3
18	You plan to organise a campaign on 'Harmful effects of Smoking on human health' in your neighbourhood areas and guide them. (a) List any three reasons that you will give to convince the people about harmful effects of Smoking on human health ? (b) List any three values that are inculcated with such approach ?	3

19	<p>Symbols of some elements are given below :</p> <p>Mg, O, Na, C, Si, P, S,</p> <p>(a) Rearrange these symbols in increasing order of their atomic number.</p> <p>(b) Arrange these elements groupwise also.</p>	5
20	<p>Pure yellow seeded plant is crossed with green seeded plant.</p> <p>(a) Is this an example of monohybrid or dihybrid cross ?</p> <p>(b) What is the phenotype in F₁ generation ?</p> <p>(c) What is the ratio of phenotype and genotype in F₂ generation ?</p> <p>(d) Which other contrasting trait pair can be taken ?</p>	5
21	<p>Explain what happens when :</p> <p>(a) Testosterone is released in males.</p> <p>(b) Pollen grain falls on the stigma of the flower.</p> <p>(c) Egg fuses with sperm cell.</p> <p>(d) Planaria is cut into many pieces.</p> <p>(e) Buds are formed on the notches of the Bryophyllum leaf.</p>	5
22	<p>Draw a ray diagram showing refraction of light through a glass prism and mark the following :</p> <p>(a) Incident ray (b) Emergent ray</p> <p>(c) Refracted ray (d) Angle of incidence</p> <p>(e) Angle of deviation (f) Angle of emergence</p>	5
23	<p>(a) A dentist uses a mirror in front of a decayed tooth at a distance of 4 cm from the tooth to get a 4 times magnified image . Use mirror formula to find the focal length and nature of mirror used. What is the nature of image.</p> <p>(b) A mirror produces a magnification of +3. When an object is placed at a distance of 20 cm from the mirror, find the position of image.</p>	5
24	<p>(a) Write relation between u, v, f for lenses and for mirrors where u, v, f are object distance, image distance and focal length respectively.</p> <p>(b) The magnification produced by a concave mirror is $m = +4$. Write the information about the image given by this statement.</p> <p>(c) Draw a ray diagram for the following and show the formation of the images in case of concave mirror when the object is placed :</p> <p>(i) Between the pole and focus point</p> <p>(ii) at the centre of curvature</p>	5

SECTION - B

25	The correct statement for soap is that it is a : (a) sodium or potassium salt of higher fatty acid (b) sodium salt of long chain benzene sulphonic acid (c) sodium salt of branched chain benzene sulphonic acid (d) calcium salt of higher fatty acid	1
26	The most suitable temperature of hot water bath during Saponification process is : (a) below 50°C (b) about 85°C (c) above 100°C (d) room temperature	1
27	Name of the salt from the following which makes the water hard is : (a) calcium hydrogen carbonate (b) potassium chloride (c) sodium carbonate (d) sodium bicarbonate	1
28	To determine the focal length of a given convex lens a student obtained the image of a well illuminated distant tree on a screen. In order to find the focal length of the lens he should measure the distance (s) between the (a) Lens and the screen only. (b) Lens and tree only. (c) Tree and screen only. (d) Tree and screen and also between the lens and screen.	1
29	In an experiment to find the focal length of a concave mirror, a graph is drawn between v and u . Choose the correct graph from the graphs given below ?  (a) A (b) B (c) C (d) D	1
30	A ray of light strikes the glass slab at an angle of 50°. What is the value of angle of incidence ? (a) 50° (b) 40°	1

	(c) 140°	(d) 150°	
31	<p>The number of triangular surfaces of a prism with which you do experiment of tracing the path of light ray through a glass prism is :</p> <p>(a) only one. (b) only two. (c) only three. (d) only four.</p>		1
32	<p>The term homology suggests :</p> <p>(a) evolutionary relationships (b) reproductive association (c) mechanical strength (d) transitional association</p>		1
33	<p>A typical dicotyledon embryo consist of :</p> <p>(a) Epicotyls, hypocotyls, plumule (b) Embryonal axis, two cotyledons (c) Embryonal axis, hypocotyls (d) Cotyledons, plumule</p>		1
34	<p>While studying the properties of acetic acid, answer the following questions.</p> <p>(a) What do we observe when blue litmus paper is dipped in acetic acid. (b) 5 mL Acetic acid mixed with 5 mL of water and shook well and kept for some time. What do we observe ? Give reason for each observation.</p>		2
35	<p>In reference of fission in amoeba, answer the following questions :</p> <p>(i) Out of the cell and nucleus which divides first ? (ii) How many daughter cells are formed in binary fission ?</p>		2
36	 <p>Observe the above ray diagram and answer the following questions :</p> <p>(a) What are (A), (B) and (C) in the diagram. (b) What is the similarity in (A) and (C).</p>		2
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