

KENDRIYA VIDYALAYA SANGATHAN VARANASI REGION

SUMMATIVE ASSESSMENT-II (2016-17)

CLASS – X

MAX. MARKS – 90

SUBJECT – SCIENCE

MAX. TIME – 3Hours

General Instructions:

- (i) The question paper comprises of two Sections, A and B. You are to attempt both the sections separately.
- (ii) All questions are compulsory.
- (iii) There is no choice in any of the question.
- (iv) Question numbers 1 to 3 in Sections-A are one mark questions. These are to be answered in one word or in one sentence.
- (v) Question numbers 4 to 6 in Sections-A are two marks questions. These are to be answered in about 30 words each.
- (vi) Question numbers 7 to 18 in Sections-A are three marks questions including a Value Based Question. These are to be answered in about 50 words each.
- (vii) Question numbers 19 to 24 in Sections-A are five marks questions. These are to be answered in about 70 words each.
- (viii) Question numbers 25 to 33 in Section-B are multiple choice questions based on practical skills. Each question is one mark question. You are to select one most appropriate response out of the four provided to you.
- (ix) Question numbers 34 to 36 in Section-B are explanatory questions based on practical skills. Each question is two marks question.

SECTION – A

1. Name the chemical process which is used to produce ghee from vegetable oils commercially.
2. Mention the name of organ situated in female reproductive system where fertilized egg gets implanted.
3. What is Biological Magnification?
4. Under what condition a lens become invisible when placed in a transparent liquid?
5. List two main causes of the pollution of water of river Ganga.
6. Write any two reasons for replacing fossil fuels by alternate source of energy.
7. i. What is Vinegar?
ii. What happens when Sodium Hydrogen Carbonate reacts with ethanoic acid?
8. An element 'X' is placed in the 13th group and 3rd period of the Modern Periodic Table.
Answer the following questions stating reason for your answer in each case:

- i. Write the electronic configuration of the element 'X'.
 - ii. Write the formula of the compound formed when the element 'X' reacts with another element 'Y' of atomic number 17.
 - iii. Will the oxide of this element be acidic, basic or amphoteric?
9. Write the electron dot formula of the following compounds -
- a. Ethane
 - b. Propene
 - c. Ethyne
10. "Sarita found iron pieces, broken plastic items, polythene bags etc. in the dustbin of her house. Her mother was just ready to throw them in the nearby open space. Sarita stopped her mother not to do so."
- i. Which types of values have been shown by Sarita?
 - ii. Why did Sarita stop her mother to throw plastic & other items in the nearby open space?
 - iii. Write at least two ways to dispose of such materials.
11. "It is a matter of chance whether a couple will have a male or a female child." Justify this statement by drawing a flow chart. Is it correct to blame mothers for the birth of female child? Comment.
12. (i.) Atomic Number is considered to be more appropriate parameter than atomic mass for classification of elements in a periodic table. Why?
(ii.) How does metallic character of elements vary on moving (a) from left to right in a period & (b) from top to bottom in a group?
13. What is placenta? Explain its function in human beings.
14. Write the full form of following abbreviations –
- (i.) STD
 - (ii.) IUCD
 - (iii.) HIV
15. Differentiate between Spore formation & Multiple fission with suitable diagrams.
16. In a cross breeding plants with pink flowers & plants with white flowers the all offspring of F1 generation had pink flowers. When the F1 generation was self-crossed, it was observed that both type of plants were produced.
Explain the following questions with suitable flow chart –
- i. What are the genotypes of the F1 progeny?
 - ii. What is the ratio of plants with pink flowers & plants with white flowers in F2 generation?
17. What do you mean by Power of a lens? A convex lens of focal length of 25 cm & a concave lens of focal length of 10 cm are placed in close contact with each other. Calculate the power of this combination of lenses.

18. (i.) Explain the formation of rainbow with suitable diagram.
(ii.) Why does the sky appear dark instead of blue to an astronaut?
19. What is Myopia? State any two cause of it. With the help of labeled ray diagram show –
a. The defective myopic eye.
b. Correction of Myopic eye using a lens.
20. (i.) A concave mirror produces three times enlarged image of an object placed at 10 cm in front of it. Calculate the focal length of the mirror.
(ii.) Which mirror do we use as side view mirror in vehicles & why?
21. (i.) What is refraction of light? State the laws of refraction.
(ii.) A concave lens has focal length of 20 cm. At what distance from the lens a 5 cm tall object be placed so that it forms an image at 15 cm from the lens? Also calculate the size of the image formed.
22. What happens when –
i. Ethanoic acid reacts with sodium hydroxide
ii. Ethanol is heated with alkaline KMnO_4
iii. Ethanoic acid reacts with sodium carbonate
iv. Ethanol is heated with excess amount of conc. H_2SO_4 at 443°K
v. Methane reacts with chlorine in presence of sunlight
23. (i.) Draw a labelled diagram of a human female reproductive system.
(ii.) Explain surgical method of contraception in human males & females.
24. (i.) How homologous organs are different from analogous organs? Explain with suitable examples.
(ii.) Describe Darwin's theory of evolution.

SECTION – B

25. When we add Na_2CO_3 solution to acetic acid, and bring a burning splinter near the gas jar we would observe that:-
(a) the burning splinter extinguishes
(b) the splinter starts burning rapidly
(c) the splinter burns with an explosion
(d) none of the above
26. Chemical compound which is used to precipitate out soap from glycerol during its preparation –
(a) NaCl
(b) CuSO_4
(c) CaCl_2
(d) ZnSO_4
27. Which group of salts will make distilled water hard when dissolved in it –
(a) NaCl & KCl
(b) CuSO_4 & BaSO_4
(c) CaCl_2 & MgCl_2
(d) ZnSO_4 & CuSO_4

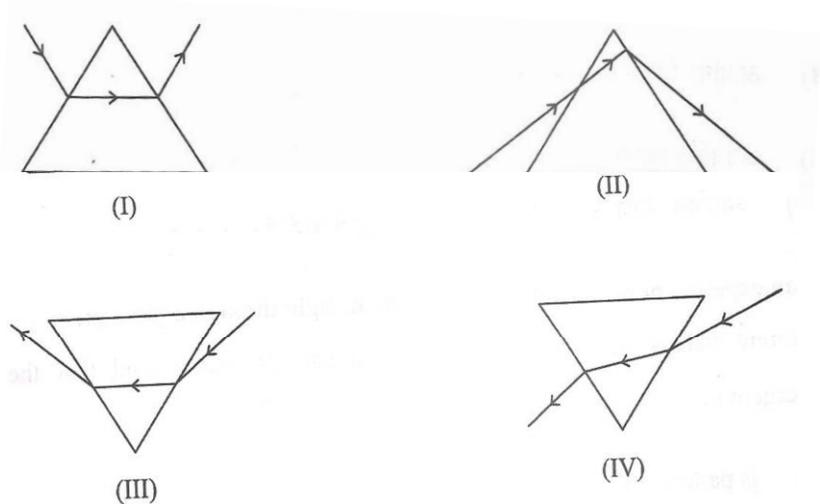
28. The part of the embryo which always grows upwards & develops into shoot is –

- (a) an embryo itself
- (b) Plumule
- (c) Radicle
- (d) Cotyledon

29. Which of the following pair is an example of analogous organs-?

- (a) Thorn of Bougainvillea & a tendril in cucurbit
- (b) Wings of an insect & wings of a bird
- (c) Forelimbs of a frog & forelimbs of a bird
- (d) None of the above

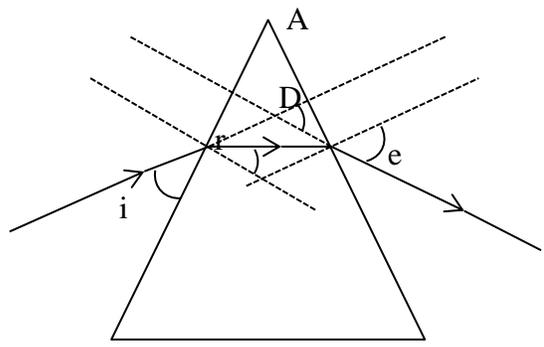
30. While performing the experiment to trace the path of a ray of light passing through a glass prism, four students marked the incident ray and the emergent ray in their diagram in the manner shown below:



The correct path of the ray has been shown by:

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

31. In the following ray diagram the correctly marked angles are -



- (a) $\angle i$ and $\angle e$
- (b) $\angle A$ and $\angle D$
- (c) $\angle i$, $\angle e$ and $\angle D$
- (d) $\angle r$, $\angle A$ and $\angle D$

32. In an experiment the image of a distant object formed by a concave mirror is obtained on a screen. To determine the focal length of the mirror, you need to measure the distance between the –

- (a) mirror & the screen
- (b) mirror & the object
- (c) object & the screen
- (d) both a & b

33. A teacher sets up the stand carrying a convex lens of focal length 15 cm at 42.7 cm mark on the optical bench. He asks four students A, B, C & D to suggest the position of screen on the optical bench so that a distinct image of a distant tree is obtained almost immediately on it. The positions suggested by the students were as –

A	B	C	D
12.7 cm	29.7 cm	57.7 cm	72.7 cm

The correct position of the screen was suggested by –

- (a) Student A
- (b) Student B
- (c) Student C
- (d) Student D

34. White scales get deposited in the inner walls of boilers & electric kettles after prolong use. What is the reason for this effect? How can these white scales be removed?

35. Name the process of asexual reproduction taking place in amoeba. Draw the diagram of various stages of this process in correct order.

36. What type of mirror is used in torch as reflector? Give reasons, also.