GUESS PAPER 2011
CLASS- X
SUBJECT: SCIENCE (SET-A)

MM.80 **TIME.3h**

GENERAL INSTRUCTIONS

1) The question paper comprises of two sections, A and B. You are two attempts both the sections.
2) All questions are compulsory.
3) There is no overall choice. However, internal choice has been provided in all the three questions of 5 marks category. Only one option in such question is to be attempted.
4) All questions of section A and all questions of section B are to be attempted separately.
5) Question numbers 1 to 4 in section A are one marks questions. These are to be answered in one word or in one sentence.
6) Question numbers 5 to 13 are two marks questions, to be answered in about 30 words each.
7) Question numbers 14 to 22 are three marks questions, to be answered in about in 50 words each.
8) Question numbers 23 to 25 are five marks questions, to be answered in about 70 words each.
9) Question numbers 26 to 41 in section B are multiple choice questions based on practical skill. Each question is a one mark question. You are to select one most appropriate response out of four provided to you.

SECTION (A)

Q1. A person is advised to wear spectacles with concave lens. What type of defect of vision is he suffering from?

Q2. What is the structural formula for ethanol?

Q3. If all the waste we generate is biodegradable, will this have no impact on the environment?

Q4. Rearrange the following according to their ascending trophic levels in a food chain:
Eagle, Plants, Insects, Frog

Q5. Is the position of a star as seen by us is true position. Justify your answer.
Q6. A mirror form 2 times real & inverted image when object is placed at a distance of 10cm. at what distance should an object be placed so that image is 3 times virtual & erect?

Q7. Give reason:
(i) Danger signals are made of red colour.
(ii) The sky appears to be blue during day time to a person on earth.

Q8. An element 'X' is in second period & group 16 of the periodic table:
(i) Is it metal or non-metal?
(ii) What is its valency?
(iii) What will be the formula of compound of 'X' with Na?

Q9. How does electronegativity of an element vary on moving from:
(1) Left to right in a period.
(2) Bottom to top in a group.

Q10. (a) What is isomerism?
(b) Draw the electron dot structure of CO_2

Q.11. What is meant by management & conservation of natural resources? Why must we conserve our forests?

Q.12. (a) What is the signification of sexual mode of reproduction?
(b) What is the site of fertilization in human beings?

Q.13. (a) Why is cross-pollination considered to be superior than self-pollination?
(b) State the method used for growing rose plants.

Q.14. (a) Convex mirror & a plane mirror forms virtual image. How will you distinguish between the two by looking at the images of an object?
(b) When we focus sunlight using a convex lens at the tip of a matchstick, what will happen? Why?

Q.15. (a) State the reason for the following observation recorded from the surface of the moon:
(i) Sky appears dark.
(ii) Rainbow is never formed.
(b) Why does a diamond sparkle?

Q.16. (a) When white light hits a prism surface, why does it split into constituent colour?
(b) The sun appears circular during evening ours. Why?

Q.17. (a) What is hydrogenation? Write one of its industrial application.
(b) Why acetic acid is known as glacial acetic acid?

Q.18. (a) Write the names of the compounds:
(i) $CH_3–CH_2–Br$
(ii) $CH_3–CH_2–CH_2–CH_2–CH_2=CH_2$

(b) A mixture of oxygen & ethyne is burnt for welding. Why do you think a mixture of ethyne & air is not used?

Q.19. Define variation in relation to a species. Why is variation beneficial to the species?

Q.20. Explain the importance of fossils in deciding evolutionary relationships.

Q.21. Distinguish between acquired & inherited traits by giving one example of each. Why are traits acquired during the lifetime of an individual not herited?

Q.22. Reproduction is essentially a phenomenon that is not for survival of an individual but for the stability of a species. Justify.

Q.23. (a) Is it possible to form a real image using a real object with a concave lens?
(b) What is the emergent angle of light after refraction in a glass slab?
(c) Define angle of prism.

OR

(a) A person wants to see the full length image of tall building in a small mirror. What type of mirror is used by him?
(b) Name a mirror that can give an erect & enlarged image of an object.
(c) Magnification produced by a concave mirror of a body 4cm in size is 0.16. What is the size of the image?

Q24. Complete the following equation:

(a) $CH_4(g) + O_2(g) \longrightarrow$

(b) $CH_3COOC_2H_5 + NaOH \longrightarrow$

(c) $CH_3CH_2OH \xrightarrow{\text{alkaline (Heat)}KMnO4}$

Q25. (a) How does the embryo get nourishment inside the mother's body?
(b) What are the functions of testes in human males?
(c) Why does mensuration occur?

OR

(a) What are the different methods of contraception?
(b) Where are the vegetative buds present in Bryophyllum?
(c) Where does the formation of DNA copy occurs?

Section-B

Q.26. The angle of incidence 'i' and reflection 'r' are equal in a transparent slab when the value of i is,
(a) 0˚ (b) 45˚ (c)90˚ (d) depend on the material of the slab

Q27. Three students measured the focal length of a convex lens using parallel rays from a distant object. All of them measured the distance between the lens and the inverted image on the screen.
Student A saw a sharp image on the screen and labelled the distance as f1.
Student B saw a slightly larger blurred image on the screen and labelled the distance as f2.
Student C saw a slightly smaller blurred image on the screen and labelled the distance as f3.
The relation between the three measurements would most likely be
(a) f1 = f2 = f3. **(b)** f1 < f2 and f3.
(c) f3 < f1 < f2. **(d)** f1 < f2 and f1= f3.

Q28. In concave mirror, the image formed is always bigger than the size of object when the object is placed:
(i) at principal focus.
(ii) at centre of curvature.
(iii) beyond centre of curvature.
(iv) between pole and focus.
The write choice is:
(a) (i) only **(b)** (i) and (iii) **(c)** (ii) only **(d)** (i) and (iv)

Q29. An object is kept 15 cm in front of a concave lens of focal length 20 cm. If the object is moved by 3 cm towards the lens, by what factor will the magnification change?
(a) 20/19 **(b)** 3/5 **(c)** 35/32 **(d)** 9/5

Q30. What is the nature and size of the image formed when an object is placed at focus F_1 of a convex lens?
(a) Virtual and erect, enlarged **(b)** Real and inverted, diminished
(c) Virtual and erect, diminished **(d)** Real and inverted, enlarged

Q.31. The self linkage property is maximum in,
(a) Carbon (b) Silicon
(c) Sulphur (d) Phosphorus

Q32. Which of the following compounds is first in the alkyne series?
(a) Methyne (b) Ethyne
(c) Propyne (d) Ethylene

Q33. The element 'Eka–Aluminium' predicted by Mendeleev is _____.
(a) boron (b) silicon
(c) gallium (d) aluminium

Q34. Which of the following orders of elements is correct in terms of decreasing atomic size?
(a) F > Cl > Br (b) K > Rb > Cs

(c) B > C > N (d) S > P > Si

Q35. Which of the following carbon compounds has the highest melting point?
(a) Acetic acid (b) Calcium carbonate
(c) Ethanol (d) Methane

Q37. Which of the following does not have a well–defined nucleus in its cells?
(a) Tiger (b) Rose flower (c) Bacteria (d) Mushroom

Q38. An organ 'X' in three different species A, B and C has similar structure and becomes more complex on going from A B C. Then, which of the following statement is true?
(a) A,B,C have separate evolutionary origins (b) A, B, C have common evolutionary origins
(c) A, B, C are not different but form a single species. (d) A is more evolved than C.

Q39. What is the accumulation of non–biodegradable substances at each trophic level referred to as?

(a) Food web (b) Biological magnification
(c) Decomposition (d) Fermentation

Q40. Which part of Bryophyllum plant helps in vegetative propagation?
(a) Roots (b) Leaves
(c) Stem (d) Flowers

Q41. A Mendelian experiment consisted of breeding tall pea plants bearing violet flowers with short pea plants bearing white flowers. The progeny all bore violet flowers, but almost half of them were short. This suggests that the genetic make-up of the tall parent can be depicted as
(a) TTWW (b) TTww
(c) TtWW (d) TtWw

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