Science and Technology Part 2

SSC Board Exam March 2027 – Practice Paper

Practice Question Paper

Time: 2 hours **Max. Marks: 40**

(1) All questions are compulsory.
(2) The numbers to the right of the questions indicate full marks.
(3) In case of MCQs (Q. No. 1(A)) only the first attempt will be evaluated and will be given credit.
(4) Scientifically correct, labelled diagrams should be drawn wherever necessary.

Q.1 (A) Choose the correct alternative and write its alphabet against the sub-question number. **[5]**

(i) Which of the following animals is considered a connecting link between reptiles and mammals?
(A) Peripatus (B) Lungfish
(C) Duck-billed platypus (D) Archaeopteryx

(ii) Which of the following molecules is called the 'energy currency' of the cell?
(A) Glucose (B) $NADH_2$
(C) ATP (D) Pyruvic acid

(iii) A food factory near Nashik makes vinegar from alcohol. The micro-organism used for this conversion is _____.
(A) Lactobacillus (B) Acetobacter aceti
(C) Saccharomyces cerevisiae (D) Rhizobium

(iv) Water vascular system and tube feet are characteristic of animals of phylum _____.
(A) Mollusca (B) Cnidaria
(C) Echinodermata (D) Annelida

(v) At the Koyna hydroelectric project, the correct sequence of energy conversion is _____.
(A) Kinetic energy → Potential energy → Electrical energy (B) Potential energy → Kinetic energy → Electrical energy
(C) Chemical energy → Heat energy → Electrical energy (D) Nuclear energy → Heat energy → Electrical energy

Q.1 (B) Answer the following questions. **[5]**

(i) Find the odd one out: Planaria, Tapeworm, Ascaris, Liver fluke

(ii) Complete the correlation: Yeast : Budding :: Planaria : _____

(iii) Name the biodiversity hotspot of India that passes through Maharashtra.

(iv) State whether true or false: The Disaster Management Act was passed in India in the year 2005.

(v) Name the process in which t-RNA brings amino acids according to the codons on m-RNA, so that a protein chain is formed.

Q.2 (A) Give scientific reasons. (Any two) **[4]**

(i) Leg muscles of a runner start aching after a fast 400 m race.

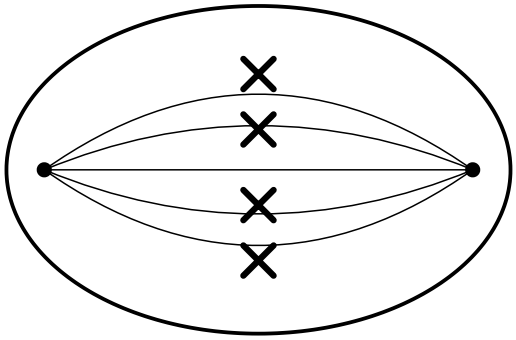
(ii) Solar energy is called a green (environment-friendly) source of energy.

(iii) Farmers who grow Bt cotton need to spray less pesticide.

Q.2 (B) Answer the following questions. (Any three) **[6]**

(i) The flipper of a whale and the wing of a bat look very different and are used for different work (swimming and flying), yet the bones in them have a similar arrangement and joints.
(a) Which type of evidence of evolution does this show?
(b) What does this similarity indicate?

(ii) Observe the figure of a dividing cell and answer:
(a) Identify the stage of mitosis shown.
(b) Write two events that take place in this stage.



Figure

(iii) What are probiotics? Write two of their uses.

(iv) Some teenagers start using tobacco products such as gutkha and cigarettes, and later become addicted to them.
(a) Write two reasons why teenagers start using such substances.
(b) Write two harmful effects of such addiction.

(v) Many wind turbines (windmills) have been set up on the Chalkewadi plateau in Satara district.
(a) Write the energy conversions that take place in a wind power plant.
(b) Wind energy is a clean source of energy, yet its use is somewhat limited. Why?

Q.3 Answer the following questions. (Any five) **[15]**

(i) A surgeon removed the swollen vermiform appendix of a patient and the patient later lived a normal, healthy life.
(a) What type of organ is the appendix in human beings? Explain the term.
(b) Name two other such organs in the human body.
(c) How do such organs support the idea of evolution?

(ii) Explain the process of double fertilization in flowering plants.

(iii) Many villages in the Sahyadri region of Pune and Ratnagiri districts protect a patch of forest called 'Devrai'. What are Devrais? How do they help in conservation of biodiversity?

(iv) Chandrapur in Maharashtra has a large coal-based thermal power station. Draw a flow chart showing the energy conversions in a thermal power plant and write one environmental problem caused by it.

(v) Write four characteristics of class Amphibia and give two examples.

(vi) Explain how milk is converted into curd. Name the micro-organism involved and write one benefit of eating curd.

(vii) What are stem cells? Write their two types and two uses.

(viii) What is cyber crime? Give two examples of cyber crime and write two precautions to avoid becoming its victim.

Q.4 Answer the following questions. (Any one) **[5]**

(i) Read the following paragraph and answer the questions.

In August 2019, continuous heavy rainfall in the catchment areas of the Krishna and Panchganga rivers, along with the release of large quantities of water from the dams, caused severe floods in Kolhapur and Sangli districts. Thousands of houses were submerged, roads were cut off and drinking water supply stopped. Teams of the NDRF, the Army and local volunteers rescued people with boats and shifted them to relief camps.

(a) Is a flood classified as a natural or a man-made disaster? Name one other disaster of the same category.

(b) Write two reasons for the floods mentioned in the paragraph.

(c) Suggest two preparedness measures a family living near a river should take before the monsoon.

(d) Write two precautions people should take regarding health after the flood water recedes.

(e) Write the full form of NDRF.

(ii) Cellular respiration releases energy from food.

(a) Write the three stages of aerobic respiration and the place in the cell where each takes place.

(b) Write the end products of glycolysis.

(c) Write the overall chemical equation of aerobic respiration.

(d) Draw a neat labelled diagram of the cell organelle in which the Krebs cycle takes place.

All the best for your exam!