<table>
<thead>
<tr>
<th>Question</th>
<th>Details</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q.1</td>
<td>Banks in India these days, hold about .......... Percent of their deposit as cash.</td>
<td>(a) 50 (b) 20 (c) 15 (d) 10</td>
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<td>Q.2</td>
<td>In a self help group, most of the decisions regarding savings and loan activities are taken by:</td>
<td>(a) Banks (b) Group members (c) NGOs (d) Government</td>
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<td>Q.3</td>
<td>Which out of the following is an example of a trade barrier?</td>
<td>(a) Foreign investment (b) Damage of Goods (c) Tax on imports (d) None of these</td>
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<td>Q.4</td>
<td>WTO aims at:</td>
<td>(a) Formulating rules for domestic trade (b) Restricting trade practices (c) Liberalizing international trade (d) None of these</td>
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<td>Q.5</td>
<td>Ford Motors entered the Indian Automobiles sector in collaboration with which Indian Manufacturer:</td>
<td>(a) Mahindra &amp; Mahindra (b) Tata Motors (c) Maruti Suzuki (d) Hindustan Motors</td>
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<td>Q.6</td>
<td>Who is the Commerce Minister of India?</td>
<td>(a) Mr. Kamalnath (b) Mr. Anand Sharma (c) Mrs. Nirmala Sitaraman (d) Mr. Kiran Reddy</td>
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<td>Q.7</td>
<td>Apex Bank for agricultural sector is</td>
<td>(a) ICICI (b) RRB (c) LDB (d) NABARD</td>
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<td>Q.8</td>
<td>Name some factors other than income that are important aspects in our lives</td>
<td>1</td>
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<td>Q.9</td>
<td>Where should consumers go to get justice?</td>
<td>1</td>
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<td>Q.10</td>
<td>On what type of products Agmark is used? Name some products.</td>
<td>1</td>
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<tr>
<td>Q11. Give three examples where an average is used for comparing situations.</td>
<td>1 Mark</td>
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<td>Q12. Who is the present finance minister of India?</td>
<td>1 Mark</td>
<td></td>
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<tr>
<td>Q13. Mention three subjects that have been included in the Union List in India.</td>
<td>1 Mark</td>
<td></td>
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<tr>
<td>Q14. Which state ensures the maximum production of coffee in India. (a) Maharashtra (b) Karnataka (c) Tamil Nadu (d) Kerala</td>
<td>1 Mark</td>
<td></td>
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<td>Q15. Explain the ways to create more employment in agricultural sector.</td>
<td>4 Marks</td>
<td></td>
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<td>Q16. In what ways, does the Reserve Bank of India supervise the functioning of banks? Why is this necessary?</td>
<td>4 Marks</td>
<td></td>
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<td>Q17: In what respects is the criterion used by the UNDP for measuring development different from the one used by the world bank?</td>
<td>4 Marks</td>
<td></td>
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<td>Q18. What is decentralization? What are the advantages of decentralization of power in India?</td>
<td>4 Marks</td>
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<td>Q19. Describe the various objections that arose against the various multi-purpose river projects in India.</td>
<td>4 Marks</td>
<td></td>
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<td>Q20. Why do we need energy? How is it generated? What are the different types of energy sources?</td>
<td>4 Marks</td>
<td></td>
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<td>Q21. Describe the factors responsible for the soil formation.</td>
<td>4 Marks</td>
<td></td>
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<td>Q22. Why are the means of transportation and communication called the lifelines of a nation and its economy?</td>
<td>4 Marks</td>
<td></td>
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<tr>
<td>Q23: Write a short note on how tourism as a trade has flourished in Indian economy?</td>
<td>4 Marks</td>
<td></td>
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Instructions:

(i) All questions are compulsory.
(ii) Questions 1 to 7 carry 1 mark each.
(iii) Questions 8 to 11 carry 2 marks each.
(iv) Questions 12 to 16 carry 3 marks each.
(v) Questions 17 to 20 carry 5 marks each.

1. When we add phenolphthalein to sodium hydroxide solution, the colour changes to pink but after adding a fixed quantity of hydrochloric acid, the pink colour disappears. Why does this happen?

2. Which of the following carbon compounds will decolourize bromine water:
   C₂H₄, C₃H₈, C₂H₆, C₄H₁₀

3. How many molecules of water are lost from Gypsum to produce POP?

4. Calculate the no. of moles present in 150g of C₂H₆?

5. Why is an alloy considered a homogeneous mixture?

6. A, B and C are three elements of a Dobereiner’s triad. The atomic mass of A is 7 and B is 23. What is the atomic mass of C?

7. In the following chemical reaction: CuO + H₂ → Cu + H₂O
   Name the oxidizing agent and the substance that gets reduced.

8. Explain water of crystallization with an example

9. Why is limestone added during extraction of iron? Explain the reaction that takes place after adding lime stone.

10. On the basis of electronic configuration how will you identify:

   (i) chemically similar elements
   (ii) the first element of a period

11. How many grams of oxygen contain the same no. of molecules as present in 352g of CO₂?

12. (i) Write two differences in the bonding of MgCl₂ and CO₂.
   (ii) Show the electron dot structure of acetic acid.

13. (i) A brown shiny element “M” on heating in air becomes black in colour. Name the element “M” and the black compound formed.
   (ii) On putting a zinc strip into the solution of mercuric chloride a shiny layer appears on the strip but when we put the strip in the magnesium sulphate solution, it does not happen. Why?
M.M. 50

GENERAL INSTRUCTIONS

1. Q No. 1 to 15 carries 3 marks each. Q no. 16 carries 5 marks.

2. Draw labeled diagrams if required.

3. Use the standard symbols and values of constants if required.

Q1. What will happen to ray of light when it travels from rarer medium to a denser medium?

   Draw ray diagram.

Q2. Define magnification. What does negative sign in the value of magnification of a
   Mirror indicate?

Q3. An image formed in a spherical mirror has magnification -2. Is the image real or virtual?
   Name the mirror also.

Q4. Define focal length of convex mirror using ray diagram.

   Focal length of a convex mirror is 10 cm. Find the radius of curvature of the mirror?

Q5. Calculate the distance at which an object should be placed in front of convex lens of
   Focal length 10 cm to obtain an inverted image double its size?

Q6. State one effect produced by the scattering of light by the atmosphere.

   Out of light of blue and red colours which one is scattered most?

Q7. What is the cause of dispersion of light?

   What is the colour of danger signal? Why?

Q8. Define Resistivity. A wire of resistivity X is stretched to double its length. What is its
   new resistivity?

Q9. Which has more resistance: 100W bulb or 60W bulb? Explain.

Q10. Given a resistors each of resistors R. How will you combine them to get the
    (i) maximum and (ii) minimum effective resistance? What is the ratio of the
    maximum to minimum resistance?
Q11. Ammeter burns out when connected in parallel. Give reasons.

Q12. Where do we connect a fuse: with live wire or with neutral wire? What is the resistance of an air gap?

Q13. The electric power consumed by a device may be calculated by using either of the two expressions \( P = I^2R \) or \( P = V^2/R \). The first expression indicates that it is directly proportional to \( R \) whereas the second expression indicates inverse proportionality. How can the seemingly different dependence of \( P \) on \( R \) in these expressions be explained.

Q 14. A current-carrying straight conductor is placed in the east-west direction. What will be the direction of the force experienced by this conductor due to earth's magnetic field? How will this force get affected on? (a) Reversing the direction of floe of current (b) doubling the magnitude of current.

Q15. Two circular coils A and B are placed close to each other. If the current in the coil A is changed, will some current be induced in the coil B? Give reason.

Q16. Draw the pattern of magnetic field lines of a current carrying solenoid. What does the pattern of field lines inside the solenoid indicate? Write one application of magnetic field of current carrying solenoid.
**Computer Aptitude Test (set 2)**

**Q1.** Which tag in HTML is used to create a blank line in document:
(a) `<p>` `<p>` (b) `<br>` (c) `<hr>` `<hr>` (d) `<h1>`

**Q2.** HTML tags are case sensitive
(a) True (b) False (c) Boolean (d) Both b and c

**Q3.** XML allows you to
(a) Arrange your tags in any order (b) Closing tags are not required (c) Create new tags (d) Tags are prefixed

**Q4.** The XML file confirming to syntax or grammar rules is called
(a) Correct document (b) Valid document (c) Confirmed document (d) Well-formed document

**Q5.** A software that spies on your computer is called
(a) Hacker (b) Spyware (c) Malware (d) Cracker

**Q6.** A program or software that lets you visit different sites on the net and display their offering on your computer is called
(a) Internet (b) Server (c) Browser (d) Client

**Q7.** The starting of a computer is called
(a) Booting (b) Rooting (c) Shooting (d) None of these

**Q8.** The harmful computer program is called
(a) Bacteria (b) Virus (c) Spam (d) Corrupt

**Q9.** Out of the following which one is most appropriate data field in context of employee table if only one of these is required?
(a) Age in years (b) Age in months (c) Age in days (d) Date of Birth

**Q10.** What data type should you choose for a zip code field in table?
(a) Text (b) Number (c) Memo (d) All of above

**Q11.** Pineapples cost more than Apples. Pineapples cost less than Kiwifruits.
If the above two statements are true, the third statement will be:
(a) Kiwifruit cost more than both apples and pineapples.
(b) The cost of Pineapple is the lowest among all fruits.
(c) Both a and b
(d) Neither a nor b

**Q12.** Four friends in the sixth grade were sharing a cake. They decided that the oldest friend would get the extra cake. Rishi is two months older than Gautam, who is three months younger than Neha. Kavita is one month older than Gautam. Who should get the extra cake?
(a) Rishi (b) Gautam (c) Neha (d) Kavita

**Q13.** While watching a movie, Meenakshi was sitting in seat 253. Shalini was sitting to the right of Meenakshi in seat 254. In the seat to the left of Meenakshi was Jaya. Jyoti was sitting to the left of Jaya. Which seat is Jyoti sitting on?
(a) 254 (b) 251 (c) 256 (d) 255

**Q14.** CTRL + X is shortcut for
(a) Undo (b) Redo (c) Copy (d) None of these

**Q15.** Operating system is
(a) Software (b) Hardware (c) Firmware (d) All of these
Q1. Two chambered heart occurs in
   (a) Crocodiles  (b) fish  (c) aves  (d) amphibians

Q2. One of the following is not an Annelid:
   (a) Nereis  (b) Earthworm  (c) Leech  (d) Urchins

Q3. Which among the following has specialized tissue for conduction of water?
   (a) [i] and [ii]  (b) [iii] and [iv]  (c) [i] and [iv]  (d) [i] and [ii]

Q4. Which among the following produce seeds?
   (a) Thallophyta  (b) Bryophyta  (c) Pteridophyta  (d) Gymnosperms

Q5. Identify a member of porifera
   (a) Spongilla  (b) Euglena  (c) penicillum  (d) Hydra

Q6. Elephantiasis is caused by
   (a) Wuchereria  (b) Pinworm  (c) Planarians  (d) Liver Flukes

Q7. In human digestion of protein starts in-
   (a) stomach  (b) mouth  (c) duodenum  (d) ileum

Q8. Clotting of blood does not occur in side blood vessels due to presence of-
   (a) Oxalic acid  (b) Heparin  (c) Prothrombin  (d) Hirudin

Q9. Covering of lungs is-
   (a) Pleura  (b) Pericardium  (c) Epiglottis  (d) Capsule

Q10. A natural growth inhibitor is—
    (a) IAA  (b) Gibberellin  (c) Cytokinin  (d) Abscisic acid

Q11. Iodine is necessary for the synthesis of which hormone?
    (a) Adrenaline  (b) Thyroxine  (c) Auxin  (d) Insulin

Q12. The grafted portion of a plant is called
    (a) stalk  (b) stock  (c) layer  (d) scion
Q-13-On germination each pollen grain produces-
(a) one male gamete (b) two male gamete (c) three male gamete (d) four male gamete

Q-14-Fertilization in flowering plants produces
(a) Embryo (b) Endosperm (c) Nucellus (d) both A and B

Q-15-Gametes are-
(a) always haploid (b) Always diploid (c) always triploid (d) any of the above

Q-16-Gonads form-
(a) Sex organs (b) Gametes (c) Sex hormones (d) both A and B

Q-17-An IUCD device is
(a) Copper T (b) Condom (c) Cervical cap (d) Vasectomy

Q-18-Measurement of water pollution is made by –
(a) Coliform count (b) BOD (c) pH (d) All the above

Q-19-Which part of alimentary canal receives bile from the liver-
(a) Stomach (b) Small intestine (c) Large intestine (d) Oesophagus

Q-20-Which is the first enzyme to mix with food in the digestive tract –
(a) Pepsin (b) Cellulase (c) Amylase (d) Trypsin

Q-21-Name the main modes of nutrition?

Q-22-What is the main product of anaerobic respiration?

Q-23-What is the role of axon?

Q-24-Name any two plant hormones?

Q-25-Name the two methods of asexual reproduction?

Q-26-How many male gametes in pollen tube?

Q-27-Write two surgical method for contraception?

Q-28-What are Homologous organs? How do they provide evidence in support of evolution?

Q-29-What are natural resources? state two factors that work against an equitable distribution of these resources?

Q-30-What is Global Warming? What are harmful effects on Human life.
Q1. If two zeroes of the polynomial \( x^4 + 3x^3 - 20x^2 - 6x + 36 \) are \( \sqrt{2} \) and \( -\sqrt{2} \), find the other zeroes of the polynomial.

Q2. Solve for \( x \) and \( y \) by cross multiplication method

\[ 2x + 3y = 7, \quad 6x - 5y = 11 \]

Q3. A motor-boat whose speed is 15 km/hr in still water, goes 30 km down-stream and comes back in a total time of 4 hours 30 min. Find the speed of the stream.

Q4. Given in an A.P., \( a = 2, \ d = 8, \ S_n = 90 \), find \( n \) and \( l \)

Q5. If \( \cos \theta + \sin \theta = \sqrt{2} \cos \theta \), prove that \( \cos \theta - \sin \theta = \sqrt{2} \sin \theta \)

Q6. The angle of elevation of a cloud from a point 60 m above a lake is 30° and the angle of depression of its reflection in the lake is 60°, find the height of the cloud.

Q7. In an equilateral \( \triangle ABC \), \( D \) is a point on \( BC \) such that \( BD = 1/3 \) \( BC \).

Prove that \( 9AD^2 = 7AB^2 \)

Q8. Find the Area of shaded region where a circular arc of radius 6 cm has been drawn with vertex \( O \) of an equilateral triangle \( OAB \) of side 12 cm as centre.

Q9. A Solid consists of three parts. The middle part is a right cylinder of radius 3.5 cm. On one side of it there is a hemisphere of the same radius and on the other side there is a cone of the same radius. The height of the cylinder is 7 cm and the total height of the solid is 15 cm. Find the surface of the solid.

Q10. (a) Determine the probability of getting a total of eight in single throw with two dice.

(b) A card is drawn at random from a pack of 52 playing cards. Find the probability that the card drawn is neither an ace nor a king.