



SAMPLE PAPER

APPEARING FOR Medical CLASS XI

English: 1-10

Physics: 11-25

Chemistry: 26-40

Biology: 41-65

Mathematics: 66-80

Social Science: 81-90

TIME: 1½ hour

M.M. 90

Student's Name: Father's Name: Mobile No.:

Address

Present School:

General Instructions:

1. Duration of Test is 1½ hour and Question Paper contains 90 Questions with maximum 90 marks.
2. Use of gadgets is not allowed.
3. Student should abide by the instructions issued during the examination by the invigilator or the centre incharge.
4. Before attempting the question paper ensure that it contains all the pages and that no question is missing.
5. There is ¼ Negative marking.

Correct Method



Wrong Method



English (10 Marks)

Q1. Fill in the blank with correct verb :-

Neither of the boys _____ to take reportcard.

- (a) have not come (b) has come (c) are not come (d) were not come

Q2. Fill in the blank with correct determiner :-

The council has taken _____ decisions.

- (a) his (b) their (c) there (d) its

Q3. Fill in the blank with correct option :-

The result _____ by this evening.

- (a) will has come (b) will have come (c) had come (d) has come

Q4. My problem is that I get a few time for reading these days. (Improve the underlined part of the sentence)

- (a) I gets the few time (b) I get fewer time
(c) I get little time (d) The given sentence is correct

Q5. Select the Indirect speech of the following sentence

Anshu said, "Did you have her laptop?"

- (a) Anshu told that he had her laptop. (b) Anshu said if he had her laptop.
(c) Anshu asked if he has her laptop. (d) Anshu asked if he had had her laptop.

Q6. Select the Indirect speech of the following sentence

The students said to their teacher "Good bye."

- (a) The students forbade their teacher good bye. (b) The students bade their teacher good bye.
(c) The students told to their teacher good bye. (d) The students bade their teacher to good bye.

Q7. We know that if we throw a stone up it will come back to the earth. (Which part of the sentence has an error)

- (a) We know that (b) if we throw a stone up
(c) it will come back (d) to the earth

Q8. Fill in the blank with correct determiners.

_____ days I am very busy completing my _____ assignment.

- (a) These, second (b) These, two (c) Those, first (d) Those, one

Q9. 'To make clean breast of' means :-

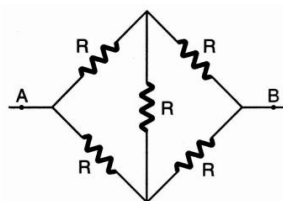
- (a) To destroy before it blooms (b) To praise oneself
(c) To gain prominence (d) To confess

Q10. 'To drive home' means :-

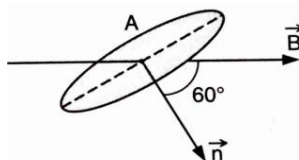
- (a) To emphasize (b) To find one's roots
(c) To return to the place of rest (d) Back original position

Physics (15 Marks)

- Q11. 10 identical wires each having resistance of 1Ω are joined in parallel, the combination has a resistance of :
- (a) 1Ω (b) 0.1Ω (c) 10Ω (d) 0.01Ω
- Q12. A current of 10 amperes is maintained in a conductor of cross-section of 10^{-4}m^2 . If the electron density is $9 \times 10^{28} \text{ m}^{-3}$, what is the drift velocity of free electrons ?
- (a) $6.9 \times 10^{-6} \text{ m s}^{-1}$ (b) $6.9 \times 10^{-4} \text{ m s}^{-1}$
 (c) $6.9 \times 10^5 \text{ m s}^{-1}$ (d) none of these
- Q13. The effective resistance between the points A and B is :



- (a) R (b) $2R$ (c) $4R$ (d) $5R$
- Q14. An electric charge q moves with a constant velocity v parallel to the lines of force of a uniform magnetic field B . The force experienced by the charge is:
- (a) qvB (b) qv/B (c) zero (d) Bv/q
- Q15. A narrow electron beam passes undeviated through an electric field $E = 3 \times 10^4 \text{ V/m}$ and an overlapping magnetic field $B = 2 \times 10^{-3} \text{ Wb/m}^2$. If the electron motion, electric field and magnetic field are mutually perpendicular, speed of the electron is :
- (a) 60 m/s (b) $10.3 \times 10^7 \text{ m/s}$
 (c) $1.5 \times 10^7 \text{ m/s}$ (d) $0.67 \times 10^{-7} \text{ m/s}$
- Q16. The radius of curvature for a convex lens is 40 cm, for each surface. Its refractive index is 1.5. The focal length will be
- (a) 40 cm (b) 20 cm (c) 80 cm (d) 30 cm
- Q17. A coil of area $A = 0.5 \text{ m}^2$ is situated in a uniform magnetic field $B = 4.0 \text{ Wb/m}^2$ and makes an angle of 60° with respect to the magnetic field as shown in fig. The value of the magnetic flux through the area A would be equal to :



- (a) 2 weber (b) 1 weber (c) 3 weber (d) $(3/2)$ weber
- Q18. Flux ϕ (in weber) in a closed-circuit of resistance 10 ohm varies with time t (in sec) according to the equation :

$$\phi = 6t^2 - 5t + 1$$

What is the magnitude of the induced current at $t = 0.25\text{s}$?

- (a) 1.2 A (b) 0.8 A (c) 0.6 A (d) 0.2 A

- Q19. In a transformer, number of turns in primary and secondary are 500 and 2000 respectively. If current in primary is 48A, then current in the secondary is :
- (a) 144 A (b) 24 A (c) 48 A (d) 12 A
- Q20. A double convex thin lens made of glass (refractive index $\mu = 1.5$) has both radii of curvature of magnitude 20 cm. Incident light rays parallel to the axis of the lens will converge at a distance L such that
- (a) $L = 20$ cm (b) $L = 10$ cm (c) $L = 40$ cm (d) $L = 20/3$ cm
- Q21. A convex lens of focal length 40 cm is in contact with a concave lens of focal length 25 cm. The power of combination is
- (a) -1.5 D (b) -6.5 D (c) $+6.5$ D (d) $+6.67$ D
- Q22. The angle of a prism is 60° and its refractive index is $\sqrt{2}$. The angle of minimum deviation suffered by a ray of light in passing through it is
- (a) About 20° (b) 30° (c) 60° (d) 45°
- Q23. Colour of the sky is blue due to
- (a) Scattering of light (b) Total internal reflection
(c) Total emission (d) None of the above
- Q24. The far-point of a short-sighted eye is 200 cm. The power of the lens is :
- (a) -0.5 D (b) 2 D (c) 1 D (d) -1.5 D
- Q25. A ray of light from a denser medium strikes a rarer medium at an angle of incidence i . If the angle of reflection is r and the angle of refraction is r' and the reflected and refracted rays make an angle of 90° with each other, then the critical angle will be :
- (a) $\sin^{-1}(\tan r)$ (b) $\sin^{-1}(\tan r')$ (c) $\tan^{-1}(\tan r)$ (d) $\tan^{-1}(\tan r')$

Chemistry (15 Marks)

- Q26. Which of the following represents the correct order of the acidic strength for equimolar aqueous solution of HCl, H₂SO₄, NH₄OH and NaOH
- (a) HCl < NH₄OH < NaOH < H₂SO₄ (b) NH₄OH < NaOH < H₂SO₄ < HCl
(c) HCl < H₂SO₄ < NH₄OH < NaOH (d) NaOH < NH₄OH < HCl < H₂SO₄
- Q27. The reaction of burning carbon in oxygen is represented by the equation
- $$\text{C(s)} + \text{O}_2\text{(g)} \longrightarrow \text{CO}_2\text{(g)} + \text{Heat} + \text{Light}$$
- When 9.0 g of solid carbon is burnt in 16.0 g of oxygen gas, 22.0 g of carbon dioxide is produced. The mass of carbon dioxide gas formed on burning of 3.0 g of carbon in 32.0 g of oxygen would be (Note : Atomic mass of C = 12.0 u, O = 16.0 u)
- (a) 6.60 g (b) 7.33 g (c) 8.25 g (d) 11.00 g

Q28. $3\text{ClO}^-(\text{aq}) \longrightarrow \text{ClO}_3^- + 2\text{Cl}^-$ is an example of

- (a) oxidation reaction (b) reduction reaction
(c) disproportionation reaction (d) decomposition reaction

Q29. Compound A on strong heating in a boiling tube gives off reddish brown fumes and a yellow residue. When the aqueous solution of A is treated with a few drops of sodium hydroxide solution, a white precipitate appeared. Identify the cation and anion present in the compound A.

- (a) Copper (II) and nitrate (b) Lead (II) and chloride
(c) Zinc and sulphate (d) Lead (II) and nitrate

Q30. Match the items of column – I with the items of column – II

Column – I

Column - II

- | | |
|--|--------------------------------|
| (A) $\text{NH}_4\text{OH} + \text{CH}_3\text{COOH} \longrightarrow \text{CH}_3\text{COONH}_4 + \text{H}_2\text{O}$ | (i) Thermal decomposition |
| (B) $2\text{AgBr} \longrightarrow 2\text{Ag} + \text{Br}_2$ | (ii) Thermit reaction |
| (C) $\text{ZnCO}_3 \longrightarrow \text{ZnO} + \text{CO}_2$ | (iii) Photochemical reaction |
| (D) $2\text{Al} + \text{Fe}_2\text{O}_3 \longrightarrow 2\text{Fe} + \text{Al}_2\text{O}_3$ | (iv) Neutralization reaction |
| (a) (B)i, (D)ii, (A)iii, (C)iv, | (b) (C)i, (A)ii, (D)iii, (B)iv |
| (c) (B)ii, (D)i, (A)iii, (C)iv | (d) (A)iv, (B)iii, (C)i, (D)ii |

Q31. In which of the following compounds, nitrogen exhibits highest oxidation state ?

- (a) N_2H_4 (b) NH_3 (c) N_3H (d) NH_2OH

Q32. When Bauxite is heated with NaOH solution, the water soluble compound formed is

- (a) NaAlO_2 (b) Na_3AlO_3 (c) $\text{Al}(\text{OH})_3$ (d) Al_2O_3

Q33. Match column A with column B and select the correct option.

Column-I

Column-II

A[Ore]

B[Nature of ore]

- | | |
|--|--|
| (1) Copper glance | (i) Sulphate ore |
| (2) Calamine | (ii) Halide ore |
| (3) Rock salt | (iii) Sulphide ore |
| (4) Epsom salt | (iv) Carbonate ore |
| (a) (1)-(i), (2)-(ii), (3)-(iii), (4)-(iv) | (b) (1)-(iv), (2)-(ii), (3)-(iii), (4)-(i) |
| (c) (1)-(iii), (2)-(iv), (3)-(ii), (4)-(i) | (d) (1)-(iv), (2)-(i), (3)-(ii), (4)-(iii) |

Q34. Which of the following statements is not correct ?

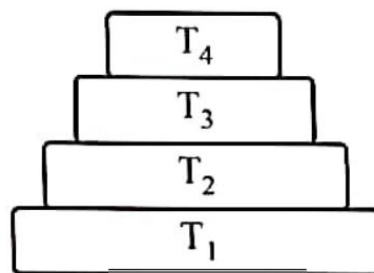
- (a) All metal carbonates react with acid to give a salt, water and carbon dioxide
(b) All metal oxides react with water to give salt and acid
(c) Some metals react with acids to give salt and hydrogen
(d) Some non metal oxides react with water to form an acid

- Q35. Reaction between X and Y, forms compound Z. X loses electron and Y gains electron. Which of the following properties is not shown by Z ?
- (a) Has high melting point (b) Has low melting point
(c) Conducts electricity in molten state (d) Occurs as a solid
- Q36. X is a metal which can replace Y and Z both from their salt solution. Y can replace Z but not W. W can replace both Y and Z but not X. What is the correct reactivity order of X, Y, Z and W ?
- (a) $W > X > Y > Z$ (b) $X > Y > Z > W$
(c) $X > W > Y > Z$ (d) $X > W > Z > Y$
- Q37. Correct statement is
- (a) NH_4Cl gives alkaline solution in water (b) CH_3COONa gives acidic solution in water
(c) CH_3COOH is a weak acid (d) NH_4OH is a strong base
- Q38. Which of the following is/are true when HCl (g) is passed through water?
- (I) It does not ionise in the solution as it is a covalent compound.
(II) It ionizes in the solution.
(III) It gives both hydrogen and hydroxyl ion in the solution.
(IV) It forms hydronium ion in the solution due to combination with water.
- (a) I only (b) III only (c) II and IV (d) III and IV
- Q39. An element with atomic number 17 is placed in the group 17 of the long form periodic table. Element with atomic number 9 is placed above and with atomic number 35 is placed below it. Element with atomic number 16 is placed left and with atomic number 18 is placed right to it. Which of the following statements are correct?
- (i) Valency of the element with atomic number 18 is zero
(ii) Elements with same valency will have atomic number 16, 17 and 18
(iii) Valency of elements with atomic number 9, 17 and 35 is one
(iv) Element with atomic number 17 is more electronegative than element with atomic numbers 16 and 35
- (a) i, ii and iii (b) i, iii and iv (c) ii, iii and iv (d) i, ii and iv
- Q40. Metals like sodium, potassium, calcium and magnesium are extracted by electrolysis of their chlorides in molten state. These metals are not extracted by reducing of their oxides with carbon because
- (i) reduction with carbon is very expensive
(ii) carbon readily makes alloy with these metals
(iii) carbon has less affinity for oxygen than these metals
(iv) carbon is weaker reducing agent than these metals
- (a) i and ii (b) ii and iii (c) iii and iv (d) iv and i

Biology (25 Marks)

- Q41. Electrical impulse travels in a neuron from
(a) dendrite → axon → axonal end → cell body.
(b) cell body → dendrite → axon → axonal end.
(c) dendrite → cell body → axon → axonal end.
(d) axonal end → axon → cell body → dendrite.
- Q42. Adrenal glands are located above these organs
(a) kidneys (b) lung (c) intestine (d) stomach
- Q43. The sugar level in the blood is controlled by
(a) pineal gland (b) thyroid gland (c) pancreas (d) liver
- Q44. The changes associated with puberty in males & females is due to the secretion of
(a) estrogen/testosterone (b) testosterone / estrogen
(c) estrogen/growth hormone (d) growth hormone / testosterone
- Q45. Select the mis-matched pair
(a) Adrenaline: Pituitary gland (b) Testosterone: Testes
(c) Estrogen: Ovary (d) Thyroxin: Thyroid gland
- Q46. Phylogeny refers to
(a) A group of phyla (b) Study of plants
(c) Genetics of animals (d) Evolutionary history/relationship of species from its ancestors
- Q47. Heredity is
(a) transmission of genetic characters from parents to offspring or one generation to the next.
(b) transmission of sexual characters from one generation to the next.
(c) transmission of morphological characters from one generation to the next.
(d) transmission of physical characters from one generation to the next.
- Q48. Conversion of large fat globules into smaller globule is :-
(a) Emulsification (b) Digestion (c) Assimilation (d) Specification
- Q49. Heart beat can be initiated by
(a) sino-atrial node (b) atrio-ventricular node
(c) sodium ion (d) purkinje's fibres
- Q50. Movement of food in digestive tract is due to
(a) concentration gradient (b) secretions (c) peristalsis (d) villi
- Q51. _____ → Zooplankton → Fish larva → Small fish → Large fish
1st trophic level in an aquatic food chain is represented by
(a) Phytoplankton (b) Tree (c) Hawk (d) Fish eating bird
- Q52. The hypothalamus, pineal gland and pituitary gland located in the
(a) brain (b) kidneys (c) lungs (d) heart

- Q53. Pancreatic juice contains more than one enzyme. Which among the following combination is correct?
- (a) Pepsin and Lipase (b) Amylase and Pepsin
(c) Pepsin and Trypsin (d) Trypsin and Lipase
- Q54. In anaerobic respiration in muscles pyruvate is converted into
- (a) ethanol (b) CO₂ (c) acetic acid (d) lactic acid
- Q55. Vigorous contraction of uterus muscles is stimulated by:-
- (a) ADH (b) GH (c) MSH (d) Oxytocin
- Q56. The first heart sound is
- (a) 'Lubb' sound at the end of ventricle systole.
(b) 'Dub' sound at the end of ventricle diastole.
(c) 'Lubb' sound at the beginning of ventricle systole.
(d) 'Dub' sound at the beginning of ventricle diastole.
- Q57. Breakdown of pyruvate using oxygen takes place in
- (a) Golgi bodies (b) chloroplast (c) mitochondria (d) nucleus
- Q58. Growth of pollen tube towards ovule is called
- (a) phototropism (b) geotropism (c) hydrotropism (d) chemotropism
- Q59. How many pairs of cranial nerves are present in man?
- (a) 12 (b) 21 (c) 31 (d) 41
- Q60. The instrument used to measure the blood pressure is
- (a) barometer (b) sphygmomanometer
(c) aneroid barometer (d) haemocytometer
- Q61. Allele is
- (a) an alternative form of a gene that is located at a specific position on a specific chromosome.
(b) a form of a gene that is located on different chromosome.
(c) an alternative form of a gene that is not located on a specific position on a specific chromosome.
(d) a form of gene that is located on different positions on a chromosome.
- Q62. In the given figure, the various trophic levels are shown in a pyramid. At which trophic level is minimum energy available?



- (a) T₄ (b) T₂ (c) T₁ (d) T₃

- Q63. Khadins, Bundhis, Ahars and Kattas are ancient structures that are examples for

- (a) grain storage (b) wood storage
(c) water harvesting (d) soil conservation

Q64. In a Mendelian experiment tall plants bearing violet flowers were bred with short pea plants bearing white flowers. The progeny all bore violet flowers but almost half of them were short. The genetic make up of the tall parent would have been

- (a) TtWw. (b) TtWW. (c) TTww. (d) TTWW.

Q65. Thorn of Bougainvillea and tendril of cucurbita are example of

- (a) analogous organs (b) homologous organs
(c) vestigial organs (d) retrogressive evolution

Mathematics (15 Marks)

Q66. First term of an arithmetic progression is 2. If the sum of its first five terms is equal to one-fourth of the sum of the next five terms, then the sum of its first 30 terms is

- (a) 2670 (b) 2610 (c) -2520 (d) -2550

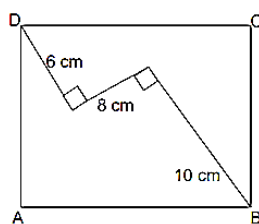
Q67. If the roots of the equation $px^2 + qx + r = 0$ are in the ratio $\ell : m$ then :

- (a) $(\ell + m)^2 pq = \ell mr^2$ (b) $(\ell + m)^2 pr = \ell mq$
(c) $(\ell + m)^2 pr = \ell mq^2$ (d) None of these

Q68. If α and β are the roots of the quadratic equation $x^2 - 6x - 2 = 0$ and if $a_n = \alpha^n - \beta^n$, then the value of $\frac{a_{10} - 2a_8}{2a_9}$ is

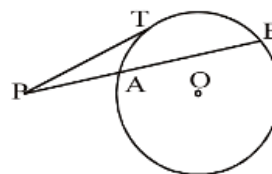
- (a) 6.0 (b) 5.2 (c) 5.0 (d) 3.0

Q69. Find the area of the square ABCD.



- (a) 160 cm^2 (b) 140 cm^2 (c) 125 cm^2 (d) 120 cm^2

Q70. In the figure, tangent $PT = 5 \text{ cm}$, $PA = 4 \text{ cm}$, find AB :



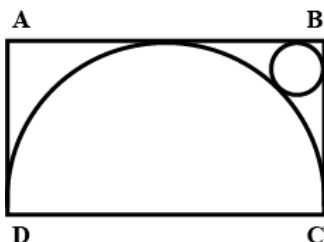
- (a) $\frac{7}{4} \text{ cm}$ (b) $\frac{11}{4} \text{ cm}$ (c) $\frac{9}{4} \text{ cm}$ (d) can't be determined

- Q71. A circle C is drawn inside a square S so that the four sides of S are tangents to C. An equilateral triangle T is drawn inside C with its vertices on C. If the area of S is k times the area of T, then the value of k is
- (a) $\frac{16}{3\sqrt{3}}$ (b) $\frac{16}{\sqrt{3}}$ (c) $\frac{32}{3\sqrt{3}}$ (d) $\frac{32}{\sqrt{3}}$
- Q72. How many points (x, y) with integral coordinates are there whose distance from (1, 2) is two units ?
- (a) One (b) Two (c) Three (d) Four
- Q73. If $\operatorname{cosec} x - \sin x = a$ and $\sec x - \cos x = b$, then
- (a) $(a^2b)^{\frac{2}{3}} + (ab^2)^{\frac{2}{3}} = 1$ (b) $(ab^2)^{\frac{2}{3}} + (a^2b^2)^{\frac{2}{3}} = 1$
(c) $a^2 + b^2 = 1$ (d) $b^2 - a^2 = 1$
- Q74. If ABCD is a cyclic quadrilateral, then the value of $\left(\tan \frac{A}{2} \tan \frac{C}{2} + \tan \frac{B}{2} \tan \frac{D}{2} \right)$ is
- (a) 1 (b) $\frac{1}{2}$ (c) 3 (d) 2
- Q75. If the angle of elevation of a cloud from a point 'h' meter above a lake is ' α ' and the angle of depression of its reflection in the lake is ' β ' find the distance of the cloud from the point of observation.
- (a) $\frac{2h \sec \alpha}{\tan \beta - \tan \alpha}$ (b) $\frac{2h}{\tan \beta - \tan \alpha}$
(c) $\frac{2h \sec \alpha}{\tan \beta + \tan \alpha}$ (d) $\frac{2h}{\tan \beta + \tan \alpha}$
- Q76. A vertical pole of height 10 metres stands at one corner of a rectangular field. The angle of elevation of its top from the farthest corner is 30° , while that from another corner is 60° . The area (in m^2) of rectangular field is
- (a) $\frac{200\sqrt{2}}{3}$ (b) $\frac{400}{\sqrt{3}}$ (c) $\frac{200\sqrt{2}}{\sqrt{3}}$ (d) $\frac{400\sqrt{2}}{\sqrt{3}}$
- Q77. A solid metallic cylinder of height 10 cm and diameter 14 cm is melted to make two cones in the proportion of their volumes as 3 : 4 keeping the height 10 cm, what would be the percentage increase in the flat surface area ?
- (a) 9 (b) 16 (c) 50 (d) 200
- Q78. The mean of three numbers is 11 more than the least of the given numbers and 15 less than the greatest number among them. If the median of the three numbers is 10, then their sum is :
- (a) 42 (b) 44 (c) 45 (d) 48

Q79. Three digit numbers are formed using the digits 0, 2 and 5 without repetition. Find the probability that the number is divisible by 5.

- (a) $\frac{3}{4}$ (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) 0

Q80. The figure shows a rectangle ABCD with a semi-circle and a circle inscribed inside it as shown. What is the ratio of the area of the circle to that of the semi-circle-



- (a) $(\sqrt{2}-1)^2$ (b) $2(\sqrt{2}-1)^2$ (c) $(\sqrt{2}-1)^2 / 2$ (d) None of these

Social Science (10 Marks)

Q81. Where are the Neyveli lignite mines located?

- (a) Goa (b) Tamil Nadu (c) Kerala (d) Andhra Pradesh

Q82. Which one of the following is a private sector industry?

- (a) BHEL (b) TISCO (c) OIL (d) SAIL

Q83. Match the following types of industries from Column A with their examples from Column B:

Column A (Types of Industries)

(A) Cooperative sector industry

(B) Public sector industry

(C) Joint sector industry

(D) Private sector industry

Column B (Examples)

(I) SAIL

(II) Oil India Ltd.

(III) Bajaj Auto Ltd.

(IV) Sugar mills in Maharashtra

(a) (A)-(I), (B)-(II), (C)-(III), D-(IV)

(b) (A)-(IV), (B)-(I), (C)-(II), D-(III)

(c) (A)-(III), (B)-(II), (C)-(I), D-(IV)

(d) (A)-(IV), (B)-(III), (C)-(II), D-(I)

Q84. Fill in the blank by choosing the most appropriate option:

..... elects the community government in Belgium.

- (a) People belonging to the respective language communities
(b) All the citizens of Belgium
(c) Belgium's leaders
(d) Ministers of the central government of Belgium

Q85. How many languages are included in the Eighth Schedule of the Indian Constitution?

- (a) 20 (b) 21 (c) 22 (d) 24

- Q86. Who among the following recognises "Political parties" in India?
- (a) Election Commission (b) President of India
(c) Speaker of Lok Sabha (d) Supreme Court
- Q87. Which one of the following is the most popular form of government in the contemporary world?
- (a) Dictatorship (b) Monarchy Rule (c) Military Rule (d) Democracy
- Q88. Per capital income is:
- (a) Income per State
(b) Income per Earning and Non Earning Members of a family
(c) Income of each female in a house
(d) Income per person
- Q89. Which of the following statements is correct about the GDP ?
- (a) It shows how big the economy of a country is in terms of purchasing power.
(b) It shows the total product of a country in a given year without calculating the national income.
(c) It shows the number of people involved in production in the tertiary sector in a year.
(d) It shows the value of total goods and services produced in a country in a year.
- Q90. Which among the following issues currency notes on behalf of the central government ?
- (a) State Bank of India (b) Reserve Bank of India
(c) Commercial Bank of India (d) Union Bank of India