

N-10(E)  
(JULY, 2011)

| પ્રશ્ન પેપરનો સેટ નંબર<br>Set No. of<br>Question Paper |   |
|--|---|
| 1  | 1 |

**PART - A**

**Time : 75 minutes]**

**[Maximum Marks : 50**

**Instructions :**

- (1) There are **50** objective type questions in this part and **all** are **compulsory**.
  - (2) The questions are serially numbered from **1** to **50** and each carries **1** mark.
  - (3) You are supplied with separate OMR sheet with the alternatives (A) ○, (B) ○, (C) ○, (D) ○ against each question number. For each question, select the correct alternative and darken the circle ○ as ● completely with the pen against the alphabet corresponding to that alternative in the given OMR sheet.
- From the following **1** to **50** questions, select the correct alternative from the given four answers and darken the circle with pen against the alphabet, against the number in OMR sheet..
  - Each question carries **1** mark.

1. Heritage is the ..... of the identity of people and the nation.

- (A) coin (B) reflection  
(C) photo (D) mirror

2. Which is the most important season in India ?

- (A) Winter (B) Summer  
(C) Monsoon (D) Spring

3. Where is "Rashtriya Manav Sangrahalaya" located ?

- (A) Bhopal (B) Kolkata  
(C) Mumbai (D) Gandhinagar

4. What is older alluvium found away from rivers called ?

- (A) Khadar (B) Kharabani  
(C) Regur (D) Bangar

5. In which grove do we find many useful herbal plants ?

- (A) Lyngdoh (B) Dev rahti  
(C) Eringol Kavoo (D) Kinkari

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6. Which of the following minerals are available from transformed rocks ?  
(A) Iron, copper, gold. (B) Slate, marble, diamond.  
(C) Coal, petroleum, natural gas. (D) Silver, bauxite, zinc.
7. In which decade India started to develop Computer hardware industry ?  
(A) 1980 (B) 1990  
(C) 2010 (D) 1970
8. On which river of Gujarat is the biggest Hydro-electric power station constructed ?  
(A) Tapi (B) Sabarmati  
(C) Narmada (D) Mahi
9. Which country ranks first position in the production of Mica ?  
(A) France (B) America  
(C) Russia (D) India
10. At which place was oil first found in Gujarat ?  
(A) Ankleshwar (B) Gandhar  
(C) Digboi (D) Lunej
11. Which river in Tamil Nadu forms the delta region ?  
(A) Kaveri (B) Krishna  
(C) Godavari (D) Tungabhadra
12. Which of the following is known as the smokeless 'white coal' of the present era ?  
(A) Hydro electricity (B) Solar energy  
(C) Thermal electricity (D) Nuclear energy
13. In India where was the first Cement plant set up ?  
(A) Mumbai (B) Kolkata  
(C) Chennai (D) Delhi
14. The semi-liquid refined iron poured into different kind of dyes is called .....  
(A) Iron ore (B) Cast iron  
(C) Pig-iron (D) Magnetite iron



15. The first historical book of Indian literature .....  
 (A) Harsh charit (B) Vikramdev charit  
 (C) Rajtarangini (D) Prithviraj Raso
16. On which fort is now the flag hoisting ceremony is carried out every year on the occasion of national festivals ?  
 (A) Fort of Chittod (B) Fort of Agra  
 (C) Red Fort, Delhi (D) Fort of Daulatabad
17. Ajanta - Ellora caves are situated in which state ?  
 (A) Gujarat (B) Maharashtra  
 (C) Karnataka (D) Madhya Pradesh
18. The earlier buddhist literature was written in .....  
 (A) Pali (B) Prakrit  
 (C) 'Ardh' Magadhi (D) Sanskrit
19. Which monument is considered as one of the Seven wonders of the World ?  
 (A) Qutub Minar (B) Taj Mahal  
 (C) Red Fort (D) Buland Darwaja
20. Where is the World's most magnificent Buland Darwaja situated ?  
 (A) Daulatabad (B) Delhi  
 (C) Pavagadh-Champaner (D) Fatehpur sikri
21. Which is the greatest achievement in the field of sculpture of the Mauryan period ?  
 (A) Pagoda (B) Chariot temple  
 (C) Somnath temple (D) Sanchi stupa
22. One of the following statements is incorrect. Select the incorrect statement.  
 (A) Pongal - Gujarat (B) Bihu - Assam  
 (C) Gangor - Rajasthan (D) Onam - Kerala
23. One of the following combinations is incorrect, select the incorrect one.  
 (A) Babarnama — written by *Babar*.  
 (B) Tuzuk-e-Jahangiri — written by *Jahangir*.  
 (C) Akbarnama — written by *Abul fazl*.  
 (D) Humayunnama — written by *Humayun*.
24. Which Indian temple is known as "Black Pagoda" ?  
 (A) Brihadeshwar temple (B) Sun temple of Konark  
 (C) Kailash temple of Ellora (D) Larkhan temple (Temple of Larkhan)

25. India is ..... country.  
 (A) Islam (B) Mono-religious  
 (C) Secular (D) Hindu
26. Which year had been declared by UN as the "International Year of the Elderly" ?  
 (A) 1998 (B) 2001  
 (C) 2002 (D) 1999
27. "Ralph Nadar" is considered as the ..... of consumer movement.  
 (A) Guide (B) Reformer  
 (C) Father (D) Advisor
28. A person who can read and write besides understanding a language is called .....  
 (A) Ignorant (B) Literate  
 (C) Illiterate (D) Non-intellectual
29. Who has given the definition of Corruption ?  
 (A) World Bank  
 (B) Reserve Bank of India  
 (C) United Nations  
 (D) International Monetary Fund
30. .... % people in Gujarat are living below the poverty line.  
 (A) 25 (B) 14.07  
 (C) 27.58 (D) 28.32
31. In which country do we find the highest number of child labourers ?  
 (A) China (B) Russia  
 (C) India (D) France
32. Which commission has been set up for the progress and welfare of the minorities ?  
 (A) National Minority Commission  
 (B) National Commission  
 (C) Baxi Panch  
 (D) Mandal Commission
33. What is the full form of "UNDP" ?  
 (A) Human Development Programme.  
 (B) United Nations Development Programme.  
 (C) Human Development Index.  
 (D) Human Development Report.



34. Which inscription is the best specimen of sculpture in India ?  
 (A) Sarnath (B) Sanchi  
 (C) Loriya (D) Nandangadh
35. Which region of Gujarat is famous for the production of Tobacco ?  
 (A) Kanam (B) Coorg  
 (C) Bhal (D) Charotar
36. Which city of Gujarat is famous for Akik jewellery ?  
 (A) Khambhat (B) Surat  
 (C) Patan (D) Hyderabad
37. One of the following sets is incorrect, select the incorrect set.  
 (A) 21st March - World Forestry Day.  
 (B) 4th October - Van Mahotsav.  
 (C) 5th June - World Environment Day.  
 (D) 29th December - World Biodiversity Day.
38. Select the correct combination from those given below :  
 (A) Andhra Pradesh — Kathak dance.  
 (B) Kerala — Kuchipudi dance.  
 (C) West Bengal — Kathakali dance.  
 (D) Tamil Nadu — Bharatnatyam dance.
39. Where is one-horned rhinoceros found ?  
 (A) Assam and West Bengal (B) Gujarat and Madhya Pradesh  
 (C) Kutch and Saurashtra (D) Karnataka and Kerala
40. The ..... were the direct heirs of Stone Age civilization.  
 (A) Aryans (B) Nishad  
 (C) Dravidians (D) Habsi
41. In India about ..... % land comprises plains.  
 (A) 30 (B) 27  
 (C) 43 (D) 40
42. Indian culture means .....  
 (A) Culture of 'sat', 'chit' and 'anand'.  
 (B) Culture of Himalayas, Ganga and Yamuna.  
 (C) Culture of activity highest ideals of mankind.  
 (D) Culture of human development.

43. Which is the main economic activity of a developing country ?  
 (A) Large scale industries (B) Transportation  
 (C) Key industries (D) Agriculture
44. What is the process of co-ordinating land, capital and labour for production called ?  
 (A) Planning (B) Accumulation  
 (C) Utility (D) Entrepreneurship
45. Which is the central Bank of our country ?  
 (A) Reserve Bank of India  
 (B) State Bank of India  
 (C) Bank of Baroda  
 (D) Central Bank of India
46. Transfer of ownership of an industrial unit from public to the private owner is .....  
 (A) Globalization (B) Privatization  
 (C) Permanent development (D) Liberalization
47. Which National highway of India is known as the "Grand Trunk Road" ?  
 (A) No. 8 (B) No. 7  
 (C) No. 3 (D) No. 2
48. Industries that are involved in the production from Pin to Nuclear weapons are included in which sector ?  
 (A) Secondary sector (B) Primary sector  
 (C) Service sector (D) Other sector
49. Which city is emerged as the electronic capital of India ?  
 (A) Delhi (B) Bangalore  
 (C) Mumbai (D) Jamshedpur
50. Which system evolved because of the failure of the market mechanism method ?  
 (A) Mixed economy (B) Capitalist  
 (C) Socialist (D) Democratic



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## N-10(E)

### PART - B

**Time : 2 Hours]**

**[Maximum Marks : 50**

**Instructions :-**

- (1) This question paper contains 4 sections and 18 questions.
- (2) **All** the questions are **compulsory**. Internal options are given.
- (3) Question No. 18 is Map-filling. Separate questions have been asked for the **Blind Candidates**.
- (4) Figures to the right indicate full marks.

#### SECTION - A

- Questions from No. 1 to 5 carry equal marks. Each question carries 2 marks. Answer as per the requirement.

1. What is Culture ? Explain. 2
  2. Explain in brief the Sun Temple of Modhera. 2
  3. Explain the specialities of Mahabalipuram. 2
- OR**
3. Discuss about the Roads of Mohenjo Daro.
  4. Mention the reasons for the destruction of Wildlife. 2
  5. What are the reasons for the production of variety of agricultural crops in India ? 2

#### SECTION - B

- The questions from No. 6 to 10 carry 2 marks each. Answer as per the requirement.

6. Explain the main difference between the Himalayan rivers and the Peninsular rivers. 2
- OR**
6. What are the main objectives of rain water preservation ?
  7. Explain the importance of Industries in India. 2
  8. Explain in brief the Sugar Industry of India. 2
  9. In India, why the death rate amongst women is high ? 2
  10. Explain the difference between Terrorist and Revolutionary. 2



**SECTION - C**

- Questions from No. 11 to 15 carry equal marks. (3 marks each)  
Answer as per requirement.

11. Give information about the Music of ancient India. Explain in brief about "Sangeet Ratnaker". 3

12. Give a brief note on Amir Khusro. 3

**OR**

12. Discuss in detail about the Medieval Tamil literature.

13. Discuss the contribution of Agriculture in the National Economy. 3

14. Discuss the steps taken for the protection of Environment. 3

15. In which different ways are the consumers being exploited ? 3

**OR**

15. Discuss in brief the reasons or causes of Price rise.

**SECTION - D**

- Questions from No. 16 to 18 carry equal marks. (5 marks each)  
Answer as per the requirement.

16. Give information about the ancient Vastu Shastra. 5

17. Give the definition of Unemployment. Discuss in detail any five types of unemployment. 5

**OR**

17. (A) Write the characteristics of the people living below the Poverty line.  
(B) Give information about "Jawahar Gram Samruddhi Yojana".

18. Show the following details in the given outline Map of India. 5

- (1) Gir Sanctuary.
- (2) Bhakra Nangal Project.
- (3) One region producing coffee.
- (4) One centre of Woollen textile industry.
- (5) Railway route from Kolkata to Mumbai, with two stations.

**Only for the Blind candidates :**

18. Instead of map pointing, answer the following questions.

- (1) "Gir Sanctuary" is situated in which state ?
- (2) "Bhakra Nangal" project is constructed on which river ?
- (3) One region producing coffee.
- (4) Write one centre of Woollen textile industry.
- (5) Mention the name of two stations while going by rail from Kolkata to Mumbai.



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Set No. of  
Question Paper

1

1

Time : 75 minutes]

**PART - A**

[Maximum Marks : 50

**Instructions :**

- (1) There are **50** objective type questions in this part and **all** are **compulsory**.
  - (2) The questions are serially numbered from **1** to **50** and each carries **1** mark.
  - (3) You are supplied with separate OMR sheet with the alternatives (A) ○, (B) ○, (C) ○, (D) ○ against each question number. For each question, select the correct alternative and darken the circle ○ as ● completely with the pen against the alphabet corresponding to that alternative in the given OMR sheet.
- From the following **1** to **50** questions, select the correct alternative from the given four answers and darken the circle with pen against the alphabet, against the number in OMR sheet.
  - Each question carries **1** mark.

1. What is molecular formula of Ethanal ?  
(A) HCHO (B) CH<sub>3</sub>OH  
(C) CH<sub>3</sub>CHO (D) CH<sub>3</sub>CH<sub>2</sub>OH
2. U shaped part at the beginning of small intestine is called .....  
(A) Duodenum (B) Gall Bladder  
(C) Urinary Bladder (D) Rectum
3. Which cells produce disease resistance substance (immuno potential substance)?  
(A) RBC (Erythrocytes) (B) Leucocytes  
(C) Blood platelets (D) Blood Corpuscles
4. Which are the excretory structure in Earthworm ?  
(A) Nephridium (B) Flame cells  
(C) Osculum (D) Contractile Vacuole
5. Where the antigens for the blood group are situated ?  
(A) On WBC (B) Blood plasma  
(C) On RBC (D) Blood platelets

6. Which of the following is not a Natural Satellite ?

- (A) Triton (B) Demos  
(C) Aryabhata (D) Sheron

7. What is used in Endoscopy for checking the internal body parts of human beings in medical field ?

- (A) Optical fibres (B) Photochromatic glass  
(C) Pyrex glass (D) Optical glass

8. Who invented (constructed) the pH scale ?

- (A) Boyle (B) Sorensen  
(C) Lewis (D) Guldberg

9. Eating soda's (Baking soda) molecular formula is .....

- (A) NaCl (B)  $\text{Na}_2\text{CO}_3$   
(C)  $\text{NaHCO}_3$  (D)  $\text{CaCO}_3$

10. Which is the bluish planet of the Solar system ?

- (A) Mercury (B) Saturn  
(C) Venus (D) Neptune

11. What is manufactured (prepared) from Cobalt steel ?

- (A) Transformer (B) Electro-magnet  
(C) Helmet (D) Permanent magnet

12. Which catalyst is used in the preparation of vegetable ghee (Dalda) from vegetable oil by hydrogenation process ?

- (A) Nickel (B) Chromium  
(C) Nichrome (D) Manganese

13. What is the unit of Rate of Reaction ?

- (A) Molar (B) Second  
(C) Molar / Second (D) Minute

14. Which ions are free in acid as per Arrhenius opinion ?

- (A)  $\text{H}^+$  (B)  $\text{OH}^-$   
(C)  $\text{N}^-$  (D)  $\text{O}^-$



15. Which pigment is responsible for photoperiodism in plants ?  
 (A) Auxin (B) Ethylene  
 (C) Chloroform (D) Phytochrome
16. In which organism the nerve net is found ?  
 (A) Sponges (B) Hydra  
 (C) Earthworm (D) Cockroach
17. The hormones secreted by Hypothalamus regulates the functioning of which gland ?  
 (A) Pituitary (B) Thyroid  
 (C) Thymus (D) Pancreas
18. By what name grafting of root system contains part of plant is known?  
 (A) Stock (B) Scion  
 (C) Sucker (D) Rhizome
19. Name the organ, where the various parts of central nervous system and cerebellum are connected by the transverse band of nerves.  
 (A) Spinal cord (B) Pons  
 (C) Medulla Oblongata (D) In heart
20. What is the diameter of Hydrogen atom ?  
 (A) 1.0 nm (B) 0.1 nm  
 (C) 2.0 nm (D) 0.2 nm
21. Through which of the following, electricity is transformed into light ?  
 (A) Nanotubes (B) Nanocrystal  
 (C) Nanocomposite (D) Nano fabrication
22. How many times greater is the thermal conductivity of Carbon nanotube than Silver ?  
 (A) 10 (B) 100  
 (C) 1,000 (D) 10,000
23. What is the velocity of Light in vacuum ?  
 (A)  $3 \times 10^6 \text{ ms}^{-1}$  (B)  $3 \times 10^7 \text{ ms}^{-1}$   
 (C)  $3 \times 10^8 \text{ ms}^{-1}$  (D)  $3 \times 10^9 \text{ ms}^{-1}$
24. Which coloured light is least deviated in a spectrum obtained through the prism ?  
 (A) Violet (B) Blue  
 (C) Red (D) Yellow

25. What is the name of the hormone secreted by Testis ?  
(A) Progesterone (B) Oestrogen  
(C) Insulin (D) Testosterone
26. Which mineral element is responsible for Minamata ?  
(A) Mercury (B) Lead  
(C) Copper (D) Zinc
27. In female, the time period of 45-50 years of age is known by .....  
(A) Menstruation (B) Menopause  
(C) Gestation period (D) Lactation
28. From which year the Forest Conservation Act was implemented ?  
(A) 1980 (B) 1986  
(C) 1972 (D) 1968
29. Which disease is caused due to *Treponema Pallidum* ?  
(A) AIDS (B) Syphilis  
(C) Gonorrhoea (D) Hepatitis
30. Who proposed the 'mutation theory' ?  
(A) Weismann (B) Lamarck  
(C) Darwin (D) Hugo Deveries
31. Which type of chromosome possesses satellite ?  
(A) Telocentric (B) Acrocentric  
(C) Sub-metacentric (D) Metacentric
32. Which of the following shows regeneration ?  
(A) Amoeba (B) Paramoecium  
(C) Planeria (D) Rhizopus
33. In which organism, high incubation temperature results in the development of male ?  
(A) Tortoise (B) Lizard  
(C) Grasshopper (D) Human



34. Which is the monomer of Natural Rubber ?  
(A) Chloroprene (B) Neoprene  
(C) Isoprene (D) Polythene
35. Which alloy is used to prepare Scientific Balance ?  
(A) Steel (B) Stainless steel  
(C) Brass (D) Magnesium
36. With which group '—anal' suffix is used ?  
(A) —CHO (B) —OH  
(C)  $\begin{array}{c} \diagup \\ \diagdown \end{array} \text{C}=\text{O}$  (D) C—C
37. Which solvent (liquid) is used to remove nail polish from nails ?  
(A) Methanal (B) Methanol  
(C) Propanol (D) Acetone
38. Which substance is used in Hall-Heroult method, to bring the melting point down ?  
(A) Bauxite (B) Limonite  
(C) Cryolite (D) Haemetite
39. Which non metal exists in a liquid state ?  
(A) Bromine (B) Mercury  
(C) Chlorine (D) Sulphur
40. What is the chemical formula of Bleaching powder ?  
(A)  $\text{CaCl}_2$  (B)  $\text{CaOCl}_2$   
(C)  $\text{Ca(OH)}_2$  (D)  $\text{CaSO}_4$
41. Which acid is considered as the King of chemicals ?  
(A) HCl (B)  $\text{HNO}_3$   
(C)  $\text{H}_2\text{SO}_4$  (D)  $\text{H}_2\text{SO}_3$

42. Who gave the principle of Electromagnetic Induction ?  
(A) Faraday (B) Oersted  
(C) Volta (D) Ampere
43. 1 amu mass = ..... eV.  
(A) 931.48 (B) 931.84  
(C) 913.48 (D) 913.84
44. One electric heater having  $50\ \Omega$  resistance connected with 220 V, then how much electric current will pass through it ?  
(A) 4.4 A (B) 44 A  
(C) 0.44 A (D) 4.04 A
45. Who did the successful experiment of artificial nuclear conversion for the first time ?  
(A) Fermi (B) Rutherford  
(C) Hahn (D) Strassman
46. Which source of energy is considered as competent (great) source in future ?  
(A) Geothermal Energy (B) Natural Gas  
(C) Hydrogen (D) Biogas
47. Which lens is used by the person having the defect of vision 'Farsightedness' ?  
(A) Convex lens (B) Concave lens  
(C) Cylindrical lens (D) Bifocal lens
48. Which scientist gave the information about electron for the first time ?  
(A) Coulomb (B) Volta  
(C) Ampere (D) Thompson
49. At which place, the image of the object is formed in human eye ?  
(A) Pupil (B) Cornea  
(C) Iris (D) Retina
50. What is the unit of Electric charge ?  
(A) Ampere (B) Coulomb  
(C) Volt (D) Ohm
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N-11(E)

(JULY, 2011)

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**PART - B**

**Time : 2.00 Hours]**

**[Maximum Marks : 50**

**Instructions :-**

- (i) This question paper contains 4 sections and total 18 questions.
- (ii) All questions are **compulsory** with internal options.
- (iii) As per instruction, draw clear, clean and proportionate diagrams & label them.
- (iv) Figures on the right side indicate marks.

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**SECTION - A**

*Questions from No. 1 to 5 are Short answer type questions.*

*Answer each in maximum word limit of 30 words. (Each carries 2 marks)*

- 1. Write main differences between AC and DC current. 2
- 2. Give brief information about Mars. 2

**OR**

- 2. Write short note on 'Galaxy'.
- 3. Write the method of latest industrial production of Ethanoic acid. 2
- 4. Write uses of Washing soda. 2

**OR**

- 4. Write method of preparation of Bleaching powder with equation.
- 5. Write physical properties of Non-metals. 2

**SECTION - B**

*Questions from No. 6 to 10 are Short answer type questions. Answer each of them in the word limit of 30 words. (Each carries 2 marks)*

- 6. State the working (functioning) of Space Shuttle in space. 2
- 7. State the criteria for Chemical Equilibrium. 2

8. State Environmental problems. 2
9. Write the method of Haber's process of Ammonia production. 2

**OR**

9. Write uses of Sulphur.
10. Write short note on forebrain of human being. 2

**SECTION - C**

*Questions from No. 11 to 15 are Short answer type questions. Answer each in word limit of 50 words. (Each carries 3 marks)*

11. Draw the diagram of Electric motor and explain its construction and working. 3
12. Explain the parallel connection of resistance and derive the equation for equivalence resistance. 3

**OR**

12. Explain Electrolysis process and write Faraday's laws.
13. State six characteristics of ideal fuel. 3
14. Explain the structure of 'Tracheid'. 3
15. By drawing the diagram, explain structure of DNA molecule. 3

**OR**

15. State the evidences of biological evolution. Explain any one of them.

**SECTION - D**

*Questions from No. 16 to 18 are included in this section. Answer each of them in the word limit of 100 words. (Each carries 5 marks)*

16. Derive Lens formula  $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$ . 5
17. Explain Bayer's process of obtaining Alumina from Bauxite. 5

**OR**

17. Discuss in detail, the chemical reactions taking place in 'Blast Furnace'.
18. Draw the diagram of digestive system of Grasshopper and explain it. 5

**OR**

18. Write a note in detail about respiratory organs of Human beings.



N-12(E)

(JULY, 2011)

પ્રશ્ન પેપરનો સેટ નંબર  
Set No. of  
Question Paper

1

1

**PART - A**

Time : 75 minutes]

[Maximum Marks : 50

Instructions :

- (1) There are **50** objective type questions in this part and **all** are **compulsory**.
- (2) The questions are serially numbered from **1** to **50** and each carries **1** mark.
- (3) You are supplied with separate OMR sheet with the alternatives (A) ○, (B) ○, (C) ○, (D) ○ against each question number. For each question, select the correct alternative and darken the circle ○ as ● completely with the pen against the alphabet corresponding to that alternative in the given OMR sheet.

- From the following **1** to **50** questions, select the correct alternative from the given four answers and darken the circle with pen against the alphabet, against the number in OMR sheet.
- Each question carries **1** mark.

1. .... makes the changes according to the need in the income tax rate .  
(A) Prime minister (B) Finance minister  
(C) Chief minister (D) Defence minister
2. In the formula  $\bar{x} = A + \frac{\sum f_i d_i}{n} \times c$  to find the mean  $d_i = \dots$   
(A)  $x_i - A$  (B)  $x_i + A$   
(C)  $\frac{x_i - A}{c}$  (D)  $x_i$
3. If the discriminant of  $2x^2 + 5x - k = 0$  is 81, then the value of  $k = \dots$   
(A) 7 (B) - 7  
(C) 2 (D) 5

[Space for  
Rough Work]

[Space for Rough Work]

4. In the formula,  $I = \frac{PRN}{100}$  of simple interest, the meaning of N is .....
- (A) Principal (B) Time  
(C) Simple interest (D) Rate of interest
5. In  $\triangle PQR$ ,  $PQ = 8$ ,  $QR = 6$ ,  $PR = 9$ .  
 $\therefore \triangle PQR$  is ..... triangle.
- (A) Obtuse angled (B) Acute angled  
(C) Right angled (D) Equiangular
6. For  $A(3, 5)$ ; and  $B(7, 5)$ ; the mid point of  $\overline{AB}$  .....
- (A)  $(5, 5)$  (B)  $\left(3, \frac{5}{2}\right)$   
(C)  $\left(\frac{3}{2}, 5\right)$  (D)  $(10, 10)$
7. In a two digit number, sum of the digits is same as the product of the digits. Hence the number is .....
- (A) 10 (B) 11  
(C) 22 (D) 23
8. The value of discriminant D is ..... of the quadratic equation  $x^2 + 2x + 2 = 0$ .
- (A) -4 (B) 4  
(C) 12 (D) 0
9. Perimeter of  $\triangle ABC$  is 35 and the perimeter of  $\triangle PQR$  is 28. If  $PR = 4\sqrt{10}$ , then  $AC = \dots\dots\dots$ , where  $\triangle ABC \sim \triangle PQR$ .
- (A)  $5\sqrt{2}$  (B)  $2\sqrt{5}$   
(C)  $4\sqrt{10}$  (D)  $5\sqrt{10}$



10. The reduced form of  $\frac{x^2 - 9}{x + 3} = \dots\dots\dots$
- (A)  $x - 3$  (B)  $x + 3$   
(C)  $x^2 - 9$  (D)  $9 - x^2$
11.  $(6, -3)$  is a point in  $\dots\dots\dots$  quadrant.
- (A) First (B) Second  
(C) Third (D) Fourth
12. In a correspondence  $ABC \leftrightarrow RPQ$  between  $\triangle ABC$  &  $\triangle PQR$ , the angle corresponding to  $\angle B$  is  $\dots\dots\dots$
- (A)  $\angle B$  (B)  $\angle Q$   
(C)  $\angle R$  (D)  $\angle P$
13. Two digit number with unit's digit 'p' and ten's digit 'q' is  $\dots\dots\dots$
- (A)  $10x + y$  (B)  $10q + p$   
(C)  $10y + x$  (D)  $10p + q$
14. H.C.F. of  $p(x) = x^2 + 1$  and  $q(x) = x^2 - 1$  is  $\dots\dots\dots$
- (A)  $x^2 - 1$  (B)  $x^2$   
(C) 1 (D)  $x^2 + 1$
15. Centre of a circle passing through any three distinct points A, B, C is  $\dots\dots\dots$
- (A) On perpendicular bisectors of  $\overline{AB}$ ,  $\overline{BC}$ ,  $\overline{CA}$ .  
(B) Centroid of  $\triangle ABC$ .  
(C) Orthocentre of  $\triangle ABC$ .  
(D) On bisectors of  $\angle A$ ,  $\angle B$ ,  $\angle C$ .

16. On walking 'a' meters on the hilly way, making an angle of measure  $30^\circ$  with the ground, one can reach the height 'b' meters from the ground. Then .....

(A)  $a = 2b$  (B)  $a = b$   
(C)  $2a = b$  (D)  $2a = \sqrt{3}b$

17. Centroid of a triangle with vertices A(1, 3), B(5, 4) and C(-3, 2) is .....

(A) (3, 1) (B) (1, 3)  
(C)  $\left(\frac{3}{2}, \frac{9}{2}\right)$  (D)  $\left(\frac{9}{2}, \frac{3}{2}\right)$

18. In  $\odot(O, r)$ ,  $\widehat{AB} \cong \widehat{CD}$ . If  $m\angle OCD = 30^\circ$ , then  $m\angle AOB = \dots\dots\dots$

(A)  $30^\circ$  (B)  $60^\circ$   
(C)  $90^\circ$  (D)  $120^\circ$

19. In  $\triangle ABC$ , A-D-B and A-E-C. If  $\overline{DE} \parallel \overline{BC}$  and  $AB : AC = 3 : 4$ , then ..... is correct.

(A)  $AD : BD = 3 : 4$  (B)  $BD : EC = 4 : 3$   
(C)  $EC : BD = 4 : 3$  (D)  $AE : BD = 3 : 4$

20. L.C.M. of  $x^2 - 1$  and  $x^2 + x = \dots\dots\dots$

(A)  $x(x + 1)$  (B)  $(x + 1)$   
(C)  $(x + 1)(x - 1)$  (D)  $x(x + 1)(x - 1)$

21. Solution set of  $x + 4y = 3$  and  $3x - 2y = 2$  is .....

(A) null set (B)  $\left\{\left(1, \frac{1}{2}\right)\right\}$   
(C) infinite set (D)  $\left\{\left(\frac{1}{2}, 1\right)\right\}$

22. Volume of a cylinder with radius 4 cm and the same height is ..... cu.cm.

(A)  $2\pi$  (B)  $4\pi$   
(C)  $18\pi$  (D)  $64\pi$



23. For  $p(x) = x^3 + 2x^2 + 6x + 5$ ,  $p(-1) = \dots\dots\dots$

- (A) 0 (B) -1  
(C) 1 (D) 2

[Space for Rough  
Work]

24. In  $\odot(O, 4)$ , the length of chord  $\overline{AB}$  is 4,  $\therefore m\angle AOB = \dots\dots$

- (A)  $30^\circ$  (B)  $60^\circ$   
(C)  $90^\circ$  (D)  $120^\circ$

25. Simple interest on Rs. 800 for two years at 8% is Rs.  $\dots\dots$

- (A) 8 (B) 16  
(C) 64 (D) 128

26.  $(1 - \cos \theta)(1 + \cos \theta) = \dots\dots\dots$

- (A)  $\cos^2 \theta$  (B)  $\operatorname{cosec}^2 \theta$   
(C)  $2 - \cos^2 \theta$  (D)  $\frac{1}{\operatorname{cosec}^2 \theta}$

27.  $11^{\text{th}}$  term of an A.P, whose  $n^{\text{th}}$  term is  $(37n + 41)$ ,  
will be  $\dots\dots\dots$

- (A) 441 (B) 448  
(C) 446 (D) 450

28. The ratio of radii of two spheres is  $2 : 3$ ,  
 $\therefore$  the ratio of their volumes is  $\dots\dots\dots$

- (A)  $27 : 8$  (B)  $4 : 9$   
(C)  $8 : 27$  (D)  $9 : 4$

29. From the conditions for the similarity of triangles,  $\dots\dots\dots$   
is not the condition for similar triangles.

- (A) SSA (B) AAA  
(C) SSS (D) SAS

30. Circumcentre of an equilateral triangle is .....  
 (A) its centroid (B) outside the triangle  
 (C) on one of the sides (D) a vertex
31. If  $\tan \theta = 1$ , then  $\sin \theta \cdot \cos \theta = \dots\dots\dots$   
 (A) 1 (B) 2  
 (C)  $\frac{1}{\sqrt{2}}$  (D)  $\frac{1}{2}$
32. The cost price of fan is Rs. 800 cash or it can be purchased by paying Rs. 425 cash as down payment and remaining amount to be paid after two months, giving the interest of Rs. 35. So, the value of the instalment is Rs. ....  
 (A) 405 (B) 410  
 (C) 420 (D) 475
33. Curved surface area of a Sphere with radius 7 cm is ..... sq.cm.  
 (A) 308 (B) 462  
 (C) 616 (D) 2464
34. If the roots of the quadratic equation are distinct and real, then .....  
 (A)  $D > 0$  (B)  $D < 0$   
 (C)  $D = 0$  (D)  $D \geq 0$
35. The roots of the quadratic equation  $x^2 - x - 30 = 0$  are .....  
 (A)  $(-6, 5)$  (B)  $(5, 6)$   
 (C)  $(6, -5)$  (D)  $(-5, -6)$
36. In a frequency distribution,  $n = 100$ ,  $A = 15$ ,  $\bar{x} = 15$   
 $\therefore \sum f_i d_i = \dots\dots\dots$   
 (A) 15 (B) 0  
 (C) 100 (D) -15
37. .... % surcharge is to be paid by tax payee with the annual income of more than Rs. 10,00,000. (10 lacs)  
 (A) 2 (B) 5  
 (C) 10 (D) 20

[Space for Rough Work]

N



38. In  $\triangle ABC$ ,  $a = 5$ ,  $b = 12$ ,  $c = 13$ ,  $\therefore$  Its inradius = .....

- (A) 6.5 (B) 6  
(C) 5.5 (D) 2

[Space for Rough  
Work]

39.  $\frac{x}{x-3} + \frac{3}{3-x} = \dots\dots\dots$  (Simplify)

- (A) 0 (B)  $\frac{x+3}{x-3}$   
(C)  $\frac{x-3}{x+3}$  (D) 1

40. Mean of first 10 natural numbers = .....

- (A) 5.5 (B) 55  
(C) 27.5 (D) 30

41. Formula to find volume of Sphere is .....

- (A)  $\frac{4}{3} \pi r^3$  (B)  $4 \pi r^2$   
(C)  $\frac{2}{3} \pi r^3$  (D)  $3 \pi r^2$

42. Approximate decimal value of  $\frac{1}{\sqrt{3}} = \dots\dots\dots$

- (A) 1.73 (B) 1.41  
(C) 0.58 (D) 0.20

43. H.C.F. of polynomials  $p(x)$  and  $q(x)$  is 1.

Hence, their L.C.M. = .....

- (A)  $p(x) - q(x)$  (B)  $\frac{p(x) \cdot q(x)}{2}$   
(C)  $\frac{1}{p(x) \cdot q(x)}$  (D)  $\pm p(x) \cdot q(x)$

44. For Prafulaben, maximum income of Rs. .... is tax free.

- (A) 1,00,000 (B) 1,35,000  
(C) 1,85,000 (D) 2,50,000

45. If cyclic quadrilateral is parallelogram also, then it is .....

- (A) Square (B) Rectangle  
(C) Parallelogram (D) Rhombus

[Space for Rough  
Work]

46. If  $3 \sin \theta = 4 \cos \theta$ , then  $\tan \theta = \dots\dots\dots$

- (A)  $\frac{3}{2}$  (B)  $\frac{2}{3}$   
(C)  $\frac{4}{3}$  (D)  $\frac{3}{4}$

47. .... is the reciprocal of additive inverse rational expression of  $\frac{x-3}{2+x}$ .

- (A)  $\frac{3-x}{x+2}$  (B)  $\frac{x+2}{x-3}$   
(C)  $\frac{x-3}{x+2}$  (D)  $\frac{x+2}{3-x}$

48. In  $\triangle ABC$ ,  $m\angle A + m\angle B = m\angle C$ .

If  $AC = 7$ ,  $BC = 24$ , then  $AB = \dots\dots$

- (A) 17 (B) 25  
(C) 31 (D) 56

49. If  $x = 2$  is a root of the equation  $kx^2 + 3x - 4 = 0$ , then the value of  $k = \dots\dots\dots$

- (A)  $\frac{1}{2}$  (B) 2  
(C)  $-\frac{1}{2}$  (D) -2

50. Mean of a data is 84. If each observation is added by 3 and then divided by 5, then the new mean = .....

- (A) 17.4 (B) 8.4  
(C) 87 (D) 16.8



## N-12(E)

### PART - B

Time : 2 Hours]

[Maximum Marks : 50

#### Instructions :-

- (1) There are total **Four** sections in this question paper with total 17 questions.
- (2) **All** the questions are **compulsory**. Internal options are there.
- (3) Draw the figures wherever necessary. Retain all the lines of construction.
- (4) Figures in right side represents the marks of the question.

### SECTION - A

With the calculation, in short, answer the following Q. No. 1 to 8.

Each question is of 2 marks.

1. The price of 1 kg. tea is seven times the price of 1 kg. sugar. If the price of 5 kg. sugar and 4 kg. tea is Rs. 660, then obtain two linear equations in two variables. 2
2. Find H.C.F. of  $p(x) = x^4 - 2x^3 - 15x^2$  and  $q(x) = x^3 - 9x$ . 2
3. Find the L.C.M. of the polynomials  $x^3 + 2x^2 - 3x$  and  $2x^3 + 5x^2 - 3x$ . 2
4. Find the sum of first 12 terms of an Arithmetic Progression 2, 6, 10, 14, ..... 2

OR

4. Find the 10th term of an Arithmetic Progression 115, 100, 85, 70, ..... 2
5.  $\overline{PM}$  is median in  $\Delta PQR$ . If  $PQ^2 + PR^2 = 148$  and  $PM = 7$ , then find the length of  $\overline{QR}$ . 2
6. P is a point in the exterior of  $\odot(O, 3)$  and  $OP = 5$ . If a line passing through P touches the circle at A, then find AP. 2

7. Prove that :

2

$$\sec^2 \theta + \operatorname{cosec}^2 \theta = \sec^2 \theta \cdot \operatorname{cosec}^2 \theta.$$

OR

7. Prove that :  $\frac{\sec \theta - 1}{\sec \theta + 1} = \frac{1 - \cos \theta}{1 + \cos \theta}$

8. Find the length of  $\overline{AB}$ , joining the points  $A(a \cos \theta, 0)$  and  $B(0, a \sin \theta)$ , where  $a > 0$ .

2

### SECTION - B

Answer the following questions from No. 9 to 12 with the calculations.

(Each question is of 3 marks)

9. Simplify :

3

$$\frac{x}{4x^2 + 6x + 2} + \frac{x}{4x^2 + 10x + 6} - \frac{2x}{4x^2 + 8x + 3}$$

OR

9. Simplify :

$$\frac{a^4 - (a-2)^2}{(a^2+2)^2 - a^2} + \frac{a^2 - (a^2-2)^2}{a^2(a+1)^2 - 4} + \frac{a^2(a-1)^2 - 4}{a^4 - (a+2)^2}$$

10. A cyclist travels a distance of 48 km. at constant speed. If the speed of the cyclist is increased by 4 km / hr, he would have taken 1 hour less.

Find the original speed of the cyclist.

3

11. The cash price of a cupboard is Rs. 1500 or in an instalment scheme, it can be purchased by paying Rs. 700 cash as down payment and an instalment of Rs. 840 after six months. Calculate the rate of interest.

3

12. The shadow of a tower is 27 m., when the angle of elevation of Sun is  $30^\circ$ . When the angle of elevation of Sun becomes  $60^\circ$ , find the length of the shadow of the tower.

3



**SECTION - C**

Answer the following questions from No. 13 to 15, as directed, with the calculations. (Each question is of 4 marks)

13. If the mean of the following data is 113.26, find the missing frequency 'f'. 4

|           |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|
| Score     | 110 | 111 | 112 | 113 | 114 | 115 |
| Frequency | 4   | 6   | 15  | 30  | f   | 20  |

OR

13. If the mean of the following frequency distribution is 13.84, then find the missing frequency 'f'.

|           |     |     |      |       |       |       |
|-----------|-----|-----|------|-------|-------|-------|
| Class     | 0-2 | 2-6 | 6-12 | 12-16 | 16-30 | 30-50 |
| Frequency | 3   | 5   | 12   | f     | 7     | 3     |

14. If a circle touches the sides of a parallelogram, then prove that it is a Rhombus. 4

15. A solid is made of a cylinder with both conical ends. The total length of the solid is 41 cm and radius of the cylinder is 5 cm. If the height of both the cones is 12 cm., then find the total surface area of the solid. ( $\pi = 3.14$ ) 4

**SECTION - D**

Answer the following questions from No. 16 to 17. (Each question is of 5 marks)

16. Prove that : "If an altitude is drawn to the hypotenuse of a right-angled triangle, then the triangles formed are similar to given triangle and also they are mutually similar." 5

OR

16. Prove that : "Square of the length of the hypotenuse of a right-angled triangle is the sum of the squares of the lengths of the other two sides."

17. Draw  $\overline{PQ}$  such that  $PQ = 5$  cm. Construct major segment on  $\overline{PQ}$  containing the angle having the measure of  $30^\circ$ . Write the steps of construction. 5

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