CAREER POINT
STAR

Scholastic **T**est for **A**nalysis and **R**eward

CLASS - 10th

(Class 10th Studying Students)

Duration: 2:00 hours

Maximum marks: 300

Instructions to Candidates

1. CP Star Test paper consists of total 75 questions and has been divided in three sections as follows:

   a. Science   25 Questions   Que. No. 01 to 25

   b   Maths   25 Questions   Que. No. 26 to 50

   c. Mental Ability   25 Questions   Que. No. 51 to 75

2. All questions are compulsory.

3. All the answers will be encircled in OMR sheet which is being provided along with this paper.

4. For every correct answer marked by you, **4** marks will be allotted.

5. For every incorrect answer marked by you, **1** marks will be deducted.

5. Use of calculator is not permitted in any case.

7. Any kind of malpractice will expel you from exam immediately.

8. For any confusion please talk to the invigilator in the examination hall.

9. For any kind of suggestions or complaints send Email at **info@cpil.in**

CAREER POINT

SECTION-a [SCIENCE]

Q.1 Which of the following lenses would you prefer to use while reading small letters found in a dictionary ?
(1) A convex lens of focal length 50cm.
(2) A concave lens of focal length 50 cm.
(3) A convex lens of focal length 5 cm.
(4) A concave lens of focal length 5cm

Q.2 The human eye forms the image of an object at its
(1) cornea   (2) iris
(3) pupil   (4) retina

Q.3 Which of the following terms does not represent electrical power in a circuit ?
(1) I^2R (2) IR^2
(3) VI   (4) V^2/R

Q.4 Plane mirror is used in:
(1) Galvanometer Scale (2) Microscope
(3) Telescope   (4) None of these

Q.5 Short sightedness is also called as:
(1) myopia   (2) hypermetropia
(3) presbyopia   (4) astigmatism

Q.6 A lens converges light rays. The lens is:
(1) plane
(2) convexo-concave
(3) concave
(4) convex

Q.7 Ohm's law is true:
(1) For metallic conductors at low temperature
(2) For metallic conductors at high temperature
(3) For electrolytes when current passes through them
(4) For diode when current flows

Q.8 In how many parts (equal) a wire of 100 Ω be cut so that a resistance of 1 Ω is obtained by connecting them in parallel?
(1) 10   (2) 5
(3) 100   (4) 50

Q.9 The iron metal in Fe_3O_4 is present as
(1) Fe(II) ions.
(2) Fe(III) ions.
(3) Simple iron atoms with no charge.
(4) Combination of Fe(II) and Fe(III) ions.

Q.10 Generally metals have silver or grey colour with a few exceptions, the colour of copper metal is
(1) greenish.   (2) violet-green.
(3) whitish green.   (4) reddish-brown.

Q.11 The lustrous non-metal is
(1) silicon.   (2) sulphur.
(3) phosphorous.   (4) iodine.

Q.12 A salt gives acidic solution when dissolved in water. The salt is formed from
(1) weak acid and weak base.
(2) strong acid and strong base.
(3) strong acid and weak base.
(4) weak acid and strong base.

Space for rough work

Q.13 Gas evolved during the reaction of dil.HCl with zinc granules is
(1) chlorine gas.　　(2) hydrogen gas.
(3) oxygen gas.　　(4) nitrogen gas.

Q.14 Baking soda is prepared by
(1) Haber's process.
(2) Solvay process.
(3) Ostwald's process.
(4) Chlor-alkali process.

Q.15 Lead nitrate on heating produces brown fumes of
(1) nitrogen dioxide.
(2) oxygen.
(3) lead oxide.
(4) nitrous oxide.

Q.16 When a piece of magnesium metal is placed in blue coloured copper sulphate solution, the colour of solution fades due to the formation of
(1) magnesium oxide.
(2) copper oxide.
(3) magnesium sulphate.
(4) copper sulphite.

Q.17 The process that helps in transportation of water and mineral salts is
(1) transpiration.　　(2) photosynthesis.
(3) dark reaction.　　(4) glycolysis.

Q.18 The rate of respiration in aquatic organisms is
(1) slower than the rate of respiration in terrestrial organisms.
(2) faster than the rate of respiration in terrestrial organisms.
(3) lower than the rate of respiration in arboreal organisms.
(4) lower than the rate of respiration in aerial organisms.

Q.19 In autotrophic nutrition
(1) organisms take up readymade complex food prepared by green plants.
(2) green plants prepare their own food.
(3) organisms eat the flesh of other organisms.
(4) plants take in insects to fulfill their needs.

Q.20 Alveoli of lungs in human body help in the exchange of gases as they
(1) provide a surface for the exchange of gases.
(2) do not provide any surface.
(3) bring gases from nostrils to the lungs.
(4) bring gases from lungs to the nostrils.

Q.21 Small intestine receives secretions from
(1) large intestine.　　(2) pancreas.
(3) food pipe.　　(4) lungs.

Q.22 The waste materials in plants are stored in the form of
(1) proteins.　　(2) gums and resins.
(3) vitamins.　　(4) sugar.

Space for rough work

Q.23 Damage to pancreas would effect
(1) sugar metabolism.
(2) fat metabolism.
(3) vitamin metabolism.
(4) regulation of ions.

Q.24 The part of the brain which gives rise to spinal cord is
(1) medulla oblongata. (2) cerebrum.
(3) cerebellum. (4) mid brain.

Q.25 **Assertion (1) :** The sympathetic nervous system prepares the body to meet any emergency situation.
Reason (R) : The sympathetic nervous system is stimulated by the hormone oxytocin during emergency situation.
Select the correct option from the given alternatives.
(1) Both 'A' and 'R' are true and 'R' explains 'A'
(2) Both 'A' and 'R' are true but 'R' does not explain 'A'
(3) 'A' is true and 'R' is false.
(4) 'A' is false and 'R' is true.

SECTION-b [MATHS]

Q.26 If the HCF of 85 and 153 is expressible in the form 85n – 153, then value of n is :
(1) 3 (2) 2 (3) 4 (4) 1

Q.27 $119^2 - 111^2$ is
(1) Prime number
(2) Composite number
(3) An odd prime number
(4) An odd composite number

Q.28 If cos x = cos 60º cos 30º + sin 60º sin 30º, then the value of x is –
(1) 30º (2) 15º
(3) 45º (4) 60º

Q.29 The maximum value of $\dfrac{1}{\cosec\theta}$ is
(1) 0 (2) 1
(3) $\dfrac{\sqrt{3}}{2}$ (4) $\dfrac{1}{\sqrt{2}}$

Q.30 If sec θ + tan θ = x, then tan θ = ?
(1) $\dfrac{x^2+1}{x}$ (2) $\dfrac{x^2-1}{x}$
(3) $\dfrac{x^2+1}{2x}$ (4) $\dfrac{x^2-1}{2x}$

Q.31 If a and b are positive integers such that $a = x^3y^2$ and $b = xy^3$, where x, y are prime numbers, then HCF (a, b) = ?
(1) xy (2) xy^2
(3) x^2y^2 (4) x^3y^3

Q.32 For what value of k do the equations kx – 2y = 3 and 3x + y = 5 represent two lines intersecting at a unique point?
(1) k = 3
(2) k = – 3
(3) k = 6
(4) All real values except –6

Space for rough work

Q.33 If $2x = \sec A$ and $\dfrac{2}{x} = \tan A$, then
$$2\left(x^2 - \frac{1}{x^2}\right) = ?$$
(1) $\dfrac{1}{2}$ (2) $\dfrac{1}{4}$

(3) $\dfrac{1}{8}$ (4) $\dfrac{1}{16}$

Q.34 $(\sec^4 A - \sec^2 A) = ?$
(1) $\tan^4 A - \tan^2 A$ (2) $\tan^2 A + \tan^4 A$
(3) $\tan^2 A - \tan^4 A$ (4) None of these

Q.35 If $(x + 1)$ is a factor of $x^2 - 3ax + 3a - 7$. Then the value of a is:
(1) 1   (2) –1   (3) 0   (4) 2

Q.36 There are 576 boys and 448 girls in a school that are to be divided into equal sections of either boys or girls alone. The total number of sections thus formed is:
(1) 22   (2) 16   (3) 36   (4) 42

Q.37 If $\Delta PQR \sim \Delta XYZ$, $\angle Q = 50°$ and $\angle R = 70°$, then $\angle X$ is equal to
(1) 70°   (2) 50°
(3) 120°   (4) 60°

Q.38 Given that $\sin \alpha = \dfrac{1}{2}$ and $\cos \beta = \dfrac{\sqrt{3}}{2}$, then the value of $\alpha + \beta$ is
(1) 30°   (2) 45°
(3) 60°   (4) 90°

Q.39 If $a = 1.1039$, then the value of $3a - \sqrt{4a^2 - 4a + 1}$ is :
(1) 0.1039   (2) 0.2078
(3) 2.1039   (4) 2.2078

Q.40 8 men and 12 boys can finish a piece of work in 10 days while 6 men and 8 boys can finish it in 14 days. Find the time taken by one man alone and that by one boy alone to finish the work.
(1) 130, 270
(2) 140, 280
(3) 120, 260
(4) can't determined

Q.41 If α, β are the roots of $x^2 + x + 1 = 0$ and γ, δ are the roots of $x^2 + 3x + 1 = 0$, then $(\alpha - \gamma)(\beta + \delta)(\alpha + \delta)(\beta - \gamma) =$
(1) 2   (2) 4   (3) 6   (4) 8

Q.42 In an AP, the sum of first n terms is $\left(\dfrac{3n^2}{2} + \dfrac{5n}{2}\right)$. Find its 25th term.
(1) 924   (2) 76   (3) 1924   (4) 1848

Q.43 If $b = \sqrt{\sqrt{6} - \sqrt{2}}$ and $h = \sqrt{\sqrt{6} + \sqrt{2}}$, then $\dfrac{1}{2} \times b \times h$ is :
(1) 2   (2) 1   (3) – 2   (4) – 1

Q.44 There are m A.M. between 1 and 31. If the ratio of the 7th and $(m-1)^{th}$ means is 5 : 9, then $\dfrac{m}{7}$ is equal to :
(1) 2   (2) 1
(3) 3   (4) 4

Space for rough work

Q.45 If $\dfrac{5\sqrt{3}+\sqrt{7}}{4\sqrt{3}-2\sqrt{7}} = a + b\sqrt{21}$, then (a, b) is :

(1) $a = \dfrac{37}{10}$, $b = \dfrac{7}{10}$ (2) $a = \dfrac{35}{10}$, $b = \dfrac{7}{10}$

(3) $a = \dfrac{37}{10}$, $b = \dfrac{17}{10}$ (4) $a = \dfrac{32}{10}$, $b = \dfrac{17}{10}$

Q.46 Solve for x; $3^{x+2} + 3^{-x} = 10$:
(1) –2,0 (2) – 1,0
(3) –2, –1 (4) None of these

Q.47 The first and last term of an A.P. are a and ℓ and sum of the A.P. is S, then the common difference is $\dfrac{\ell^2 - a^2}{k - (\ell + a)}$. Here k is equal to :

(1) S (2) 2S
(3) 3S (4) None

Q.48 The coordinates of A and B are (1, 2) and (2, 3). Point C lies in between A and B such that $AC + CB = AB$ and $\dfrac{AC}{CB} = \dfrac{4}{3}$. The coordinate of C are :

(1) $\left(\dfrac{4}{7}, \dfrac{3}{7}\right)$ (2) $\left(\dfrac{4}{7}, \dfrac{11}{7}\right)$

(3) $\left(\dfrac{11}{7}, \dfrac{18}{7}\right)$ (4) None of these

Q.49 Find the area of pentagon whose vertices are A(1, 1), B(7, 21), C(12, 2), D(7, – 3) and E(0, – 3) ?

(1) $\dfrac{132}{7}$ sq. units (2) $\dfrac{135}{2}$ sq units

(3) 146 sq units (4) None of these

Q.50 The points (a, a), (–a,–a) and $(-\sqrt{3}a, \sqrt{3}a)$ form the vertices of
(1) an equilateral triangle
(2) a scalene triangle
(3) an isosceles triangle
(4) a right triangle

SECTION-C [MENTAL ABILITY]

Directions: (Q.51 to Q.54) Find the missing term

Q.51 1, 3, 3, 6, 7, 9, ?, 12, 21.
(1) 10 (2) 11 (3) 12 (4) 13

Q.52 $\dfrac{1}{2}, \dfrac{3}{4}, \dfrac{5}{8}, \dfrac{7}{16}, ?$

(1) $\dfrac{9}{32}$ (2) $\dfrac{10}{17}$ (3) $\dfrac{11}{34}$ (4) $\dfrac{12}{35}$

Q.53 MAAL, AALM, ALMA, LMAA, ?
(1) AMLA (2) MAAL
(3) AAML (4) LAAM

Q.54 17Z5, 15X4, 13V3, ?, 9R1
(1) 11S2 (2) 11T2
(3) 11U2 (4) 11T3

Directions: (Q.55)
Which sequence of letters when placed at the blanks one after the other will complete the given letter series ?

Space for rough work

Q.55 abc _ c _ c _ ba _ _ bca

(1) abacb   (2) babac

(3) baabc   (4) bacba

Directions: (Q.56) Find the missing term

Q.56

6	18	15
3	2	5
4	3	?
8	27	9

(1) 11   (2) 6   (3) 3   (4) 2

Q.57 Use the following information :

$X \cup Y$ means divide X by Y

$X \uparrow Y$ means multiply X by Y

$X \# Y$ means subtract Y from X

$X \cap Y$ means add Y to X

One-fifth of one-tenth of two-third of a number X is given by :

(1) $X \uparrow (1 \cup 5)(1 \cup 10)(2 \cup 3)$

(2) $X (1 \uparrow 5)(1 \uparrow 10)(2 \cap 3)$

(3) $X (1 \uparrow 5)(1 \uparrow 10)(2 \uparrow 3)$

(4) can't be determined

Q.58 In the following question some numbers are given in the shape of figures

$\bigcirc \div \square = 2$, $\bigcirc \div \triangle = 5$,

$\square + \triangle = 7$, $\triangle \times \mathbf{0} = 18$

What is the value of $\mathbf{0}$?

(1) 9   (2) 6

(3) 3   (4) 2

Q.59 Arrange the given words in the order they occur in dictionary.

1.SIGN   **2.**SOLID   **3.**SCENE   **4.**SIMPLE

(1) 3, 1, 2, 4   (2) 3, 1, 4, 2

(3) 3, 4, 1, 2   (4) 3, 4, 2, 1

Q.60 If every alternate letter, starting with A, is removed from the alphabet, which letter among the remaining letters would be the third to the right of the fifth letter from the right?

(1) X   (2) V   (3) L   (4) J

Q.61 If **BOOK** is coded as **43**, what will be the code number for **PEN** ?

(1) 53   (2) 33

(3) 35   (4) 43

Q.62 If **Eye** is called **Hand**, **Hand** is called **Mouth**, **Mouth** is called **Ear**, **Ear** is called **Nose** and **Nose** is called **Tongue**, with which of the following would a person **hear** ?

(1) Eye   (2) Mouth

(3) Nose   (4) Ear

Q.63 Amit faces towards North. Turning to his right he walks 25 metres. He then turns to his left and walks 30 metres. Next, he moves 25 metres to his right. He then turns to his right again and walks 55 metres. Finally, he turns to the right and moves 40 metres. In which direction is he now from his starting point ?

(1) South-West   (2) South

(3) North-West   (4) South-East

Space for rough work

Q.64 From his house, Rajan went 25 kms to the North. Then he turned West and covered 20 kms. Then he turned South and covered 15 Kms. Finally, turning to East, he covered 20 kms. In which direction was he from his house ?
(1) East (2) West
(3) North (4) South

Directions : (Q.65 & Q.66): Six girls J, K, L, M, N, and P are sitting in a circle facing the centre and playing cards. L has J sitting to her left and P to her right. N is sitting opposite to L and K is sitting opposite to J.

Q.65 Who sits opposite to P?
(1) L (2) M (3) N (4) K

Q.66 Who are sitting on either side of J?
(1) L,M (2) M,N
(3) N,K (4) P, K

Directions : (Q.67 & Q.68): Read the following information carefully and choose the correct alternative.
A, Y, Z and Q are all different people
A is Y's daughter.
Y is Z's son.
Z is Q's father.

Q.67 Which of the following must be true?
(1) Z is A's uncle
(2) Q and Y are brothers.
(3) A is Q's daughter
(4) If T is Y's daughter, then A and T are sisters.

Q.68 Which of the following is consistent with the three statements above?
(1) Q is A's father
(2) Z has three children
(3) A has one brother
(4) A is Z's granddaughter

Q.69 Which of the following diagrams correctly represents the relationship among Football fans, Hockey players and Students.
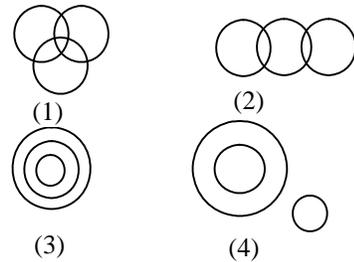
Q.70 Which of the following diagrams correctly represents the relationship among Sun, Earth, Solar System

Directions : (Q.71 & Q.72): Choose the word which is least like the other words in the group

Q.71 (1) Pistol (2) Sword
(3) Gun (4) Rifle

Space for rough work

Q.72 (1) Book   (2) Paper

       (3) Pencil   (4) Pen

Q.73 On what day of the week India will celebrate its Republic Day on 26th January, 2015 ?

       (1) Sunday   (2) Monday

       (3) Tuesday   (4) Wednesday

Q.74 If 1st October is Sunday, then 1st November will be

       (1) Monday   (2) Tuesday

       (3) Wednesday   (4) Thursday

Q.75 Two positions of dice are shown below. What number will appear on the opposite to the face containing '5'?
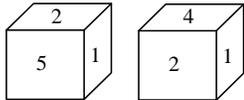
       (1) 2   (2) 4

       (3) 1   (4) 6

Space for rough work