

Discover the Star within you and Get Rewarded

Sample Paper

CAREER POINT STAR

Scholastic Test for Analysis and Reward

CLASS - 11th

(Class 11th Studying Students)

Duration: 1:00 hours

Maximum Marks (PCM): 120

Maximum Marks (PCB) : 160

Instructions to Candidates

1. CP Star Test paper consists of total 40 questions and has been divided in three sections as follows:

a. Physics	10 Questions	Que. No. 01 to 10
b. Chemistry	10 Questions	Que. No. 11 to 20
c. Mathematics	10 Questions	Que. No. 21 to 30
d. Biology	20 Questions	Que. No. 21 to 40

Note: PCM student will attempt section a, b, c and PCB student will attempt section a, b, d.

- All questions are compulsory.
- All the answers will be encircled in OMR sheet which is being provided along with this paper.
- For every correct answer marked by you, **4** marks will be allotted.
- For every incorrect answer marked by you, **0** marks will be deducted.
- Use of calculator is not permitted in any case.
- Any kind of malpractice will expel you from exam immediately.
- For any confusion please talk to the invigilator in the examination hall.
- For any kind of suggestions or complaints send Email at cpinfo@cpuniverse.in



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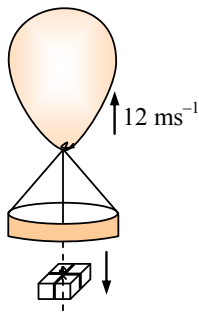
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निरीक्षक के अनुदेशों के बिना पेपर न खोलें

SECTION-a [PHYSICS]

- Q.1** A balloonist is ascending at a velocity of 12 ms^{-1} . A packet is dropped from it when it is at a height of 65 m from the ground. Time taken by the packet to reach the ground is



- (1) 5 s (2) -5 s
(3) 7 s (4) $13/5 \text{ s}$

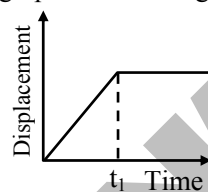
- Q.2** A particle moves along x-axis in such a way that its coordinate (x) varies with time (t) according to the expression $x = 2 - 5t + 6t^2$. Its initial velocity is -

- (1) -3 ms^{-1} (2) -5 ms^{-1}
(3) 2 ms^{-1} (4) 3 ms^{-1}

- Q.3** A pebble is thrown vertically upwards from bridge with an initial velocity of 4.9 m/s. It strikes the water after 2s. If acceleration due to gravity is 9.8 m/s^2 . The height of the bridge and velocity with which the pebble strike the water will respectively be-

- (1) 4.9 m, 1.47 m/s (2) 9.8 m, 14.7 m/s
(3) 49 m, 1.47 m/s (4) 1.47 m, 4.9 m/s

- Q.4** The x – t graph shown in figure represents :



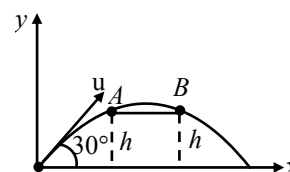
- (1) Constant velocity
(2) Velocity of the body is continuously changing
(3) Instantaneous velocity
(4) The body travels with constant speed upto time t_1 and then stops

- Q.5 Assertion :** The speed of the particle remain constant when the angle between $\vec{a}$ and $\vec{v}$ is equal to 90° .

Reason : If the angle between $\vec{a}$ and $\vec{v}$ is 90° , the path of the particle is parabolic.

- (1) Both Assertion & Reason are True & Reason is a correct explanation of the Assertion.
(2) Both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(3) Assertion is True but the Reason is False.
(4) Both Assertion and Reason are False.

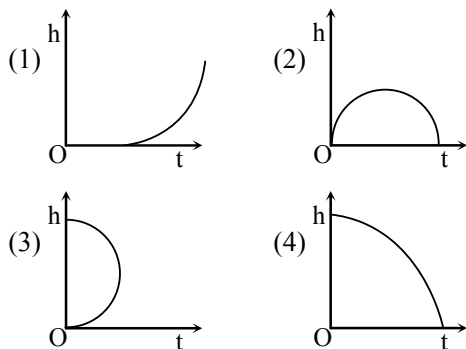
- Q.6** A particle is thrown with a velocity 40 m/s. If it passes A and B as shown in figure at time $t_1 = 1 \text{ s}$ and $t_2 = 3 \text{ s}$. The value of h is -



- (1) 15 m (2) 10 m (3) 30 m (4) 20 m

Space for rough work

- Q.7** Which of the following is the altitude-time graph for a projectile thrown horizontally from the top of the tower -



- Q.8** A car is travelling at a velocity of 10 km/h on a straight road. The driver of the car throws a parcel with a velocity of $10\sqrt{2}$ km/h when the car is passing by a man standing on the side of the road. If the parcel is to reach the man, the direction of throw makes the following angle with the direction of the car-

- (1) 135° (2) 45°
 (3) $\tan^{-1}(\sqrt{2})$ (4) $\tan^{-1}\left(\frac{1}{\sqrt{2}}\right)$

- Q.9** An aeroplane moving horizontally with a speed of 180 km/hr drops a food packet while flying at a height of 490 m. The horizontal range is -

- (1) 180 m (2) 980 m
 (3) 500 m (4) 670 m

- Q.10 Assertion :** At highest point of projectile velocity and acceleration are perpendicular to each other

Reason : At top point vertical component of velocity is zero

- (1) Both Assertion & Reason are True & Reason is a correct explanation of the Assertion.
 (2) Both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
 (3) Assertion is True but the Reason is False.
 (4) Both Assertion and Reason are False.

SECTION-b [CHEMISTRY]

- Q.11** The kinetic and potential energy (in eV) of electron present in third Bohr's orbit of hydrogen atom are respectively:

- (1) -1.51, -3.02 (2) 1.51, -3.02
 (3) -3.02, 1.51 (4) 1.51, -1.51

- Q.12** Which one of the following constitutes a group of the isoelectronic species -

- (1) NO^+ , C_2^{2-} , CN^- , N_2
 (2) CN^- , N_2 , O_2^{2-} , C_2^{2-}
 (3) N_2 , O_2^- , NO^+ , CO
 (4) C_2^{2-} , O_2^- , CO , NO

- Q.13** If in $^{16}_8\text{O}$ mass of proton become half and mass of neutron also become double then % change in mass will be

- (1) increase in 25% (2) decrease in 25%
 (3) increase in 20% (4) decrease in 20%

Space for rough work

- Q.14** The wave number of the first line of Balmer series of hydrogen is 15200 cm^{-1} . The wave number of the first Balmer line of Li^{2+} ion is-
- (1) 15200 cm^{-1} (2) 60800 cm^{-1}
(3) 76000 cm^{-1} (4) 136800 cm^{-1}

- Q.15** **Assertion :** For $n = 3$, l may be 0, 1 and 2 and m may be 0; ± 1 and 0, ± 1 and ± 2 .

Reason : For each value of n , there are 0 to $(n - 1)$ possible values of l ; for each value of l , there are 0 to $\pm l$ value of m .

- (1) Both Assertion & Reason are True & Reason is a correct explanation of the Assertion.
(2) Both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(3) Assertion is True but the Reason is False.
(4) Both Assertion and Reason are False.

- Q.16** Density of dry air Containing only N_2 and O_2 is 1.15 g/L at 740 mm of Hg & 300 K . What % composition of N_2 by weight in the air.

- (1) 78 % (2) 75.5 %
(3) 70.02 % (4) 72.75 %

- Q.17** A compound used in making nylon is 43.8% oxygen. There are 4 oxygen atom atoms per molecule. What is the molecular weight of compound ?

- (1) 36 (2) 116
(3) 292 (4) 146

- Q.18** Law of multiple proportions is illustrated by one of the following pairs -

- (1) H_2S and SO_2 (2) NH_3 and NO_2
(3) BeO and BeCl_2 (4) N_2O and NO

- Q.19** A compound contains equal masses of the elements A, B and C. If the atomic weight of A, B and C are 20, 40 and 60 respectively, the empirical formula of the compound is -

- (1) $\text{A}_2\text{B}_2\text{C}$ (2) AB_2C_3
(3) ABC (4) $\text{A}_6\text{B}_3\text{C}_2$

- Q.20** **Assertion :** Molarity of pure water is 55.55 M at 298 K .

Reason : Molarity is temperature dependent.

- (1) Both Assertion & Reason are True & Reason is a correct explanation of the Assertion.
(2) Both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(3) Assertion is True but the Reason is False.
(4) Both Assertion and Reason are False.

SECTION-c [MATHEMATICS]

- Q.21** In an A.P., sum of first n terms is $2n^2 + 3n$; its common difference is -

- (1) 4 (2) 3 (3) 2 (4) 6

- Q.22** If the sum of n terms of two arithmetic series are in the ratio $7n + 1 : 4n + 27$, then their 11^{th} terms are in the ratio -

- (1) 3 : 4 (2) 4 : 3
(3) 78 : 61 (4) 152 : 119

- Q.23** If 8 arithmetic means are placed between 2 and 17, then the 5^{th} arithmetic mean will be -

- (1) $61/3$ (2) $76/3$ (3) $31/3$ (4) $106/3$

Space for rough work

Q.24 The sum of all 2 digit odd numbers is -
(1) 2475 (2) 2530 (3) 4905 (4) 5049

Q.25 $8 + 88 + 888 + \dots$ to n terms =
(1) $\frac{80}{81}(10^n - 1) - \frac{8n}{9}$ (2) $\frac{10}{81}(10^n - 1)$
(3) $\frac{80}{81}(10^n - 1) + \frac{8n}{9}$ (4) None of these

Q.26 $\sin(540^\circ + \theta) - \cos(1170^\circ - \theta)$
(1) 0 (2) $-2 \sin \theta$
(3) $2 \cos \theta$ (4) None of these

Q.27 If $A + B = \frac{5\pi}{4}$ then $\frac{\cot A}{1 + \cot A} \times \frac{\cot B}{1 + \cot B} =$
(1) $\frac{1}{3}$ (2) $(1 + \cot B)$
(3) $\frac{1}{(1 + \tan A)}$ (4) $\frac{1}{2}$

Q.28 $\frac{3 + \cot 76^\circ \cot 16^\circ}{\cot 76^\circ + \cot 16^\circ} = ?$
(1) $\cot 44^\circ$ (2) $\tan 44^\circ$
(3) $\cot 46^\circ$ (4) none of these

Q.29 $\cos^3 \theta \sin 3\theta + \sin^3 \theta \cos 3\theta = ?$
(1) $\frac{3}{4} \sin 4\theta$ (2) $\cos^3 \theta \cdot \sin 3\theta$
(3) $\sin 3\theta - \cos 3\theta$ (4) None of these

Q.30 If $\theta = \frac{\pi}{2^n + 1}$, $n > 0$ then find value of
 $\cos \theta \cdot \cos 2\theta \cdot \cos 2^2 \theta \dots \cos 2^{n-1} \theta -$
(1) $\frac{1}{2^{n-1}}$ (2) $\frac{1}{2^n}$ (3) $\frac{1}{2^{n+1}}$ (4) $\frac{1}{2}$

SECTION-d [BIOLOGY]

Q.21 Read the following statements regarding methanogens and select the correct option.

- (i) They are included in the group Archaeobacteria.
 - (ii) They are responsible for the production of biogas in gobar gas plants.
 - (iii) They live in hot sulphur springs.
 - (iv) They are strictly anaerobic
- (1) Statements (i) and (ii) are correct
(2) Statements (i), (ii) and (iv) are correct
(3) Statements (ii), (iii) and (iv) are correct
(4) All Statements are correct

Q.22 Which of the following statements regarding kingdom Animalia is incorrect ?

- (1) It includes heterotrophic, unicellular eukaryotic organisms
- (2) The members of this kingdom lack cell walls.
- (3) The mode of nutrition is holozoic
- (4) The sexual reproduction in its members is by copulation of male and female.

Q.23 Which of the following contains insectivorous plants?

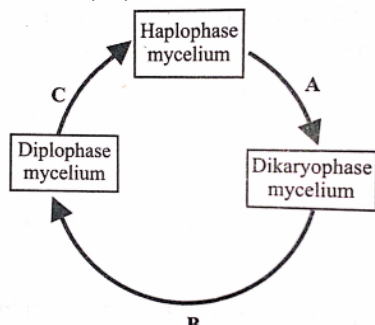
- (1) Bladderwort and Cuscuta
- (2) Cuscuta and Solanum
- (3) Venus fly trap and bladderwort
- (4) Solanum and Venus fly trap

Q.24 Fungi producing 8 spores in a sac belong to the Class

- (1) Phycomycetes (2) Ascomycetes
- (3) Basidiomycetes (4) Deuteromycetes

Space for rough work

- Q.25** Given is the representation of life cycle of members of classes Ascomycetes and Basidiomycetes. Select the correct option for processes A, B, and C



	A	B	C
(1)	Karyogamy	Plasmogamy	Meiosis
(2)	Plasmogamy	Karyogamy	Meiosis
(3)	Plasmogamy	Meiosis	Karyogamy
(4)	Karyogamy	Meiosis	Plasmogamy

- Q.26** Which of the following classes of kingdom fungi are characterized by the presence of coenocytic, multinucleate and branched mycelium ?
- (1) Basidiomycetes (2) Phycomycetes
(3) Ascomycetes (4) Deuteromycetes

- Q.27** Read the given statements that describe certain infectious particle.
- (i) It was discovered by T.O. Diener and was found to be smaller than viruses.
(ii) It causes potato spindle tube disease
(iii) It is a free RNA particle which lacks the protein coat
(iv) It has low molecular weight RNA as genetic material
- Which of the following is referred to here ?
- (1) Virus (2) Viroid
(3) Virion (4) Bacteriophage

- Q.28** In plants, mosaic formation, leaf rolling and curling, yellowing of plant parts, vein clearing, dwarfing and stunted growth, necrosis etc, are the symptoms of
- (1) bacterial diseases
(2) mycoplasmal diseases
(3) viral diseases
(4) fungal diseases

- Q.29** Virion is
- (1) nucleic acid of virus
(2) antiviral agent
(3) protein of virus
(4) completely assembled virus outside host

- Q.30** **Assertion :** In bacteria, photosynthesis is anoxygenic.

Reason : Photolysis of water occurs in bacteria.

- (1) Both Assertion & Reason are True & Reason is a correct explanation of the Assertion.
(2) Both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(3) Assertion is True but the Reason is False.
(4) Both Assertion and Reason are False.

- Q.31** What is true about birds?
- (1) they possess a diaphragm separating thorax from abdomen
(2) they usually maintain a body temperature which is relatively lower than that of mammals
(3) they excrete mostly urea
(4) they have a beak but no teeth

Space for rough work

- Q.32** Which one of the following categories of animals is correctly described with no single exception in it ?
 (1) All reptiles posses scales have three chambered heart & are cold blooded
 (2) All bony fishes have four pair of gills & an operculum on each side
 (3) All sponges are marine & have collared cell
 (4) All mammals are viviparous & possess diaphragm for breathing
- Q.33** Bilaterally symmetrical but acoelomate animal is-
 (1) liver fluke (2) jelly fish
 (3) round worm (4) crab
- Q.34** Cuttle fish belongs to which group of animals ?
 (1) Mollusca (2) Cartilagenous fish
 (3) Bony fish (4) Cyclostomes
- Q.35** Respiratory pigment of annelids may be -
 (1) Haemoglobin (2) Erythrocrurin
 (3) Both of the above (4) None of the these
- Q.36** In frog, sclerotic is
 (1) bony (2) fibrous
 (3) cartilaginous (4) none of these
- Q.37** Pearl is produced in the bivalve belonging to the genus -
 (1) Ostrea (2) Pinctada
 (3) Pecten (4) Lamellidens
- Q.38** Which of the following shows polymorphism?
 (1) *Physalia* (2) *Trypanosoma*
 (3) *Termite* (4) All of these
- Q.39** Which one of the following is a matching pair of a body feature & animal possessing it ?
 (1) Ventral central nervous system - Leech
 (2) Pharyngeal gill slits absent in embryo - chameleon
 (3) Ventral heart – Scorpion
 (4) Post anal tail - octopus
- Q.40** **Assertion :** In proifera archaeocytes are totipotent.
Reason : They give rise to all other types of cells.
 (1) Both Assertion & Reason are True & Reason is a correct explanation of the Assertion.
 (2) Both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
 (3) Assertion is True but the Reason is False.
 (4) Both Assertion and Reason are False.

Space for rough work



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