DAV PUBLIC SCHOOL SECL BISHRAMPUR

Diwali Vacation Home Work

CLASS : XII 2026-27

English

The cultural festival in ABP school kochi ,was organised to celebrate the school 's achievements. As the senior editor Rasha bharadwaj , write this report for the school magazine detailing various aspects of the festival. You may Use the following cues:

1.Organisation and significance

2.performance and exhibition

3.particioants engagement

4.overall success

Hindi

1. अपठित गद्यांश एवं काव्यांश।

2. अभिव्यक्ति और माध्यम के पाठ तीन, चार और पांच से दो- दो अंक के तीन-तीन प्रश्नों को हल करना।

3. निम्नलिखित विषयों पर **150** शब्दों में रचनात्मक लेखन कीजिए

I. प्रकृति से टूटता नाता

II.आर्टिफिशियल इंटेलिजेंस तथा रोजगार

PHYSICS

1. Do preparation for mock test 2
2. Learn important questions given in class room

CHEMISTRY

1. thoroughly for Mock Test.

2.Revise PYQ of Chapters coming in Mock Test2.

3.Bring completed Project file.

MATHEMATICS

SOLVE THESE QUESTIONS IN ASSIGNMENT COPY

1. Let set $X = \{1, 2, 3\}$ and a relation R is defined in $X\ as: R = \{(1, 3), (2, 2), (3, 2)\}$, then minimum ordered pairs which should be added in relation R to make it reflexive and symmetric are _____.

2. Let $A = \{x \in Z : 0 \leq x \leq 12\}$. Show that $R = \{(a, b) : a, b \in A, |a - b|\ is\ divisible\ by\ 4\}$ is an equivalence relation. Find the set of all elements related to 1.

3. Show that the relation R defined by (a, b) R (c, d) $\Rightarrow a + d = b + c$ on the set N x N is an equivalence relation.

4. Show that $f : N \to N$, given by $f(x) = \begin{cases} x + 1, if\ x\ is\ odd \\ x - 1, if\ x\ is\ even \end{cases}$ is bijective (both one-one and onto).

5.A relation R in set $A = \{1, 2, 3\}$ is defined as $R = \{(1, 1), (1,2), (2,2), (3,3)\}$. Which of the following ordered pair in R shall be removed to make it an equivalence relation in$A$?

(a) (1,1) (b) (1,2) (c) (2,2) (d) (3,3)

6.Evaluate $\cos^{-1}\left(\frac{1}{2}\right) + 2\ \sin^{-1}\left(\frac{1}{2}\right)$.

7.If $\tan^{-1} x = y$, then

(a) $-1 < y < 1$ (b) $\frac{-\pi}{2} \leq y \leq \frac{\pi}{2}$

(c) $\frac{-\pi}{2} < y < \frac{\pi}{2}$ (d) $y \in \left\{\frac{-\pi}{2}, \frac{\pi}{2}\right\}$

8. Determine the value of $'k'$ for which the following function is continuous at $x = 3$.

$$f(x) = \begin{cases} \frac{(x+3)^2 - 36}{x-3}, & x \neq 3 \\ k, & x = 3 \end{cases}$$

9. If $(x^2+y^2)^2 = xy$, find $\frac{dy}{dx}$.

10. If the function f defined as $f(x) = \begin{cases} \frac{x^2-9}{x-3}, & x \neq 3 \\ k, & x = 3 \end{cases}$ is continuous at $x = 3$, find the value of k.

11. Find the value of a, if the function $f(x)$ defined by $f(x) = \begin{cases} 2x-1, & if\ x<2 \\ a, & if\ x=2 \\ x+1, & if\ x>2 \end{cases}$ is continuous at $x = 2$.

12. If $f(x) = \begin{cases} \frac{\sin(a+1)x+2si}{x}, & if\ x<0 \\ 2, & if\ x=0 \\ \frac{\sqrt{1+bx}-1}{x}, & if\ x>0 \end{cases}$ is continuous at $x = 0$, then find the values of $a$and b.

13. If $x\sqrt{1+y} + y\sqrt{1+x} = 0$ for $-1 < x, y < 1$, then prove that $\frac{dy}{dx} = \frac{-1}{(x+1)^2}$

14.If $\sqrt{1-x^4} + \sqrt{1-y^2} = a(x^2 - y^2)$, then prove that $\frac{dy}{dx} = \frac{x}{y}\sqrt{\frac{1-y^4}{1-x^4}}$.

15. If $y = (\cos x)^x + \sin^{-1}\sqrt{3x}$, find $\frac{dy}{dx}$

16. If $(\cos x)^y = (\cos y)^x$, then find $\frac{dy}{dx}$.

17. If $x^y + y^x = a^b$, then find $\frac{dy}{dx}$.

18. If $x = a(2\theta - sin2\theta)$ and $y = a(1 - cos2\theta)$, find $\frac{dy}{dx}$ when $\theta = \frac{\pi}{3}$.

19. If $x = 2\cos\theta - \cos 2\theta$ and $y = 2\sin\theta - \sin 2\theta$, then prove that $\frac{dy}{dx} = tan\left(\frac{3\theta}{2}\right)$.

20. Find the value of $\frac{dy}{dx}$ at $\theta = \frac{\pi}{4}$, if $x = ae^{\theta}(\sin\theta - \cos\theta)\ and\ y = ae^{\theta}(\sin\theta + \cos\theta)$.

21. If $x = a\sin 2t(1 + \cos 2t)$and $y = b\ cos\ 2t(1 - \cos 2t)$, find the values of $\frac{dy}{dx}$ at $t = \frac{\pi}{4}$ and $t = \frac{\pi}{3}$.

22. If $= \sqrt{\sin x + \sqrt{\sin x + \sqrt{\sin x + \ldots + \infty}}}$, then find $\frac{dy}{dx}$.

23. If $x = a(\theta + \sin\theta)\ and\ y = a(1 - \cos\theta)$, then find $\frac{d^2y}{dx^2}$at $= \frac{\pi}{2}$.

24. If $x = a\ cos^3\theta\ and\ y = a\ sin^3\theta$, then find the value of $\frac{d^2y}{dx^2}$ at $\theta = \frac{\pi}{6}$.

25. The sum of surface area of a sphere and a cuboid with sides $\frac{x}{3}, x$ and $2x$ is constant. Show that the sum of their volumes is minimum, if x is equal to three times the radius of sphere.

26. Show that the height of the cylinder of maximum volume that can be inscribed in a sphere of radius $R$is $\frac{2R}{\sqrt{3}}$. Find the volume of the largest cylinder inscribed in a sphere of radius R.

27. Find the point on the curve $y^2 = 4x$, which is nearest to the point (2, -8).

28. Show that the right circular cone of least curved surface area and given volume has an altitude equal to $\sqrt{2}$ times the radius of the base.

BIOLOGY

1. Solve the sample paper given.

2. Prepare for the upcoming Second Mock Test.

ACCOUNTANCY

Solve question papers of CBSE sample paper 2026

BUSINESS STUDIES

Solve question papers of CBSE sample paper 2026

ECONOMICS

Practice sample paper questions of 2024 and 2025

Prepare project file (12/11/2026) it will be submitted

HISTORY

Revise and learn the question - answer of the portion of Mock Test 2.

GEOGRAPHY

Learn all chapters of India people and economy for second mock test .

POLITICAL SCIENCE

Students are instructed to learn and revise the complete syllabus for Mock Test 2 thoroughly.

Additionally, students must complete their CBSE XII Project FileStudents are instructed to learn and revise the complete syllabus for Mock Test 2 thoroughly.

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IP

1 Solve Paper of Mock Test 2 in copy.

2. Prepare final project and show it after vacation.

PE