

**ASN Sr. Sec. School**  
**Class 12**  
**HOLIDAY HOMEWORK 2018-2019**

---

**Commerce**

**Note: Assignment Questions are to be done in respective subject notebook.**

**ENGLISH**

1. H.G. Wells has called Mrs Hall's guest 'A Strange Man' in the first chapter . Do you agree?(Ch 1)
  2. Why does Mrs Hall consider the stranger's arrival in the inn as her good fortune? Ch 1
  3. Do you agree that Mrs. Hall had excellent hospitality skills? Ch 1
  4. What explanation did the stranger give Mrs. Hall for coming to Iping and confining to a dark room? Ch2
  5. What seeds of suspicion did Henfrey sow in Mrs. Hall's mind against the guest? Ch 2
  6. Describe the incident when the stranger was bitten by Fearenside's dog. Ch 3
  7. What was the rummy case referred to by Teddy Henfrey when he talked to Fearenside at the little beer-shop of Iping Hanger?ch 3
  8. Why was Cuss so keen to see the stranger? Ch 4
  9. Describe Cuss's encounter with the stranger. Ch 4
  10. Why did Bunting fail to capture the burglar in spite of all the presence of mind and courage?ch 5
  11. Do you find the break up at the vicarage humorous? What traits of the Buntings' character impress you? Ch 5
  12. What took the Halls to their cellar in the early morning of Whit Monday? Why did Mr. Hall have to rush up immediately? What did he see there? Ch 6
  13. Why did Mrs. Hall faint after the furniture in the parlour strangely flew towards her/ Ch 6
  14. Why was Mr. Sandy Wadgers, the blacksmith sent for by the Halls early in the morning on Whit Monday? What suggestion did he give? Ch 6
  15. What inference do you draw about the stranger's increasing casual attitude towards safeguarding his invisibility? Discuss with reference to the furniture hurling episode when the Halls examine his room presuming him to be absent. Ch 6
  16. Describe the encounter between Mrs. Hall and the stranger when he opened the door at midday on Whit Monday.Ch 7
  17. Mr. Bobby Jaffers, the village constable was a brave man. Discuss in light of the episode when he arrived at the inn.Ch 7 Stranger
  18. Bring out the element of humour in the chapter "The Unveiling of the"Ch 7
  19. What flustered and perplexed Gibbons as he lay napping in a field oblivious of all that had taken place at the 'Coach and Horses' ? Ch 8
- 

**BUSINESS STUDIES**

- 1.prepare the project on Marketing or financial markets as discussed earlier in the class. those making a project on marketing will also have to make a model of the product selected.
- 

**ACCOUNTANCY**

1. Comprehensive Project on Accountancy based on Journal, hedger, trial, final accounts.
2. Specific Project Two-
  - A) one on ration analysis of segment; report of segment
  - B) cash flow statement of the working company with operating, investing, financing activity

NOTE: Kindly refer to the guidelines published by the CBSE.

**PHYSICAL EDUCATION**

1. All the Students ( regular and additional) have to complete their practical files on the following different skill tests:-

- i. Physical fitness AAHPER Test-Enclusing - Pull ups (for boys) and fixed arm hang (for girls)
  - ii. Flexed legs sit-ups.
  - iii. Shuttle Run ( 5x5m. )
  - iv. Standing Broad Jump
  - v. 50 yards
  - vi. 600 yards run walk
2. Skill of any one team, games on choice from the given :  
Athletics, Basketball, Football, Handball, Hockey, Kho-Kho, Rifle Shooting and Volley Ball.
  3. Conduct barrow three items , general motor ability test of ten students;
    - i. Standing Broad jump (for measuring leg strength).
    - ii. Zig- Zag Run (for measuring energy and speed.)
    - iii. Medicine Ball put (for measuring arm and shoulder strength)
  4. Procedure , Benefits and contradiction of any two Asanas for lifestyle diseases.

## INFORMATICS PRACTICES

Develop a GUI Project according to the groups allocated.

The project should be an application in any one of the domains – e-Governance, e-Business and e-Learning - with GUI

Java front-end and corresponding database in MySQL at the back-end.

Create Proper Forms in Java with the use of connectivity in MySQL

Put Validations in your project according to the requirement.

## PSYCHOLOGY

CASE STUDY FILE: Case study is an in-depth analysis of a person. You are required to choose a person on whom you want to do your case study. The person should be from 14-18 years of age and willing to cooperate with you.

## ECONOMICS

Prepare ONE hand written project of 30-40 pages (approx.) following the given guidelines-

1. Choice of topic:
  - i) What is going around us:
    - a) GST
    - b) Demonetisation
    - c) Brexit
    - d) Globalisation- origin and recent trends
    - e) Micro and small scale industries in India
    - f) Food supply channels in India
    - g) Make in India- case study of a start-up firm
    - h) Contemporary employment situation in India
    - i) Inclusive Growth Strategy
    - j) Human Development Index
    - k) Self Help Groups
    - l) Any other relevant topic
  - ii) Analyse any concept from the syllabus
- 2) Following essentials are required to be fulfilled in the project:
  - Use A4 size sheets.
  - Draw borders
  - follow the sequence of: Title page, acknowledgement, index, introduction ..... bibliography
  - page count starts from 'introduction' page.
  - Explanation of the project:
    - Introduction
    - Meaning and relevance of the subject/topic

- Explanation (use newspaper articles diagrams, graphs, statistics, pictures)
- Application of the concept
- Student's opinion/learning/suggestion.

## HOME SCIENCE

- 1 Complete your practical file Follow the instructions given in class
- 2 complete the survey report.
- 3 complete the project file.
- 4 read the lesson on food hygiene and complete the questions given at the end of the chapter.
- 5 look for vegetarian recipes that can be given to a pregnant woman and a lactating mother. Write two recipes suitable for each.

## MATHS

### Continuity & Differentiation

#### VERY SHORT ANSWER TYPE QUESTIONS (1 MARK)

1. Let  $f(x) = \sin x \cos x$ . write down the set of points of discontinuity of  $f(x)$ .
2. Given  $f(x) = \frac{1}{x+2}$ , write down the set of points of discontinuity of  $f(x)$ .
3. For what value(s) of  $n$ , the function  $f(x) = \begin{cases} x^n \sin \frac{1}{x}, & x \neq 0 \\ 0, & x = 0 \end{cases}$

Is continuous at  $x = 0$ .

4. Write the set of points of continuity of

$$f(x) = |x - 1| + |x + 1|$$

5. Write the number of points of discontinuity of  $f(x) = [x]$  in  $[3, 7]$ .
6. If  $y = e^{\log(x^5)}$ , find  $\frac{dy}{dx}$ .
7. If  $f(x) = x^2 g(x)$  and  $g(1) = 6$ ,  $g'(x) = 3$ , find the value of  $f'(1)$ .
8. If  $y = a \sin t$ ,  $x = a \cos t$  then find  $\frac{dy}{dx}$

#### VERY SHORT ANSWER TYPE QUESTIONS [2 MARKS]

9. Differentiate  $\sin(x^2)$  w. r. t.  $e^{\sin x}$
10.  $y = x^y$  then find  $\frac{dy}{dx}$
11. If  $y = x^x + x^3 + 3^x + 3^3$ , find  $\frac{dy}{dx}$
12. If  $x = a \cos^3 \theta$ ,  $y = a \sin^3 \theta$ , find  $\frac{d^2y}{dx^2}$
13. If  $y = e [\log(x+1) - \log(x)]$ , find  $\frac{dy}{dx}$
14. Differentiate  $\sin^{-1}[x\sqrt{x}]$  w. r. t.  $x$ .

#### SHORT ANSWER TYPE QUESTIONS (4 MARKS)

15. Examine the continuity of the following functions at the indicated points.

$$(I) \quad f(x) = \begin{cases} x^2 \cos\left(\frac{1}{x}\right) & x \neq 0 \\ 0 & x = 0 \end{cases} \quad \text{at } x = 0$$

$$(II) \quad f(x) = \begin{cases} x - [x] & x \neq 0 \\ 0 & x = 1 \end{cases} \quad \text{at } x = 1$$

$$(III) \quad f(x) = \begin{cases} \frac{e^x-1}{x} & x \neq 0 \\ \frac{1}{e^x+1} & x = 0 \end{cases} \text{ at } x = 0$$

$$(IV) \quad f(x) = \begin{cases} \frac{x - \cos(\sin^{-1}x)}{1 - \tan(\sin^{-1}x)} & x \neq \frac{1}{\sqrt{2}} \\ -\frac{1}{\sqrt{2}} & x = \frac{1}{\sqrt{2}} \end{cases} \text{ at } x = \frac{1}{\sqrt{2}}$$

16. For what values of constant K, the following functions are continuous at the indicated points.

$$(I) \quad f(x) = \begin{cases} \frac{\sqrt{1+kx} - \sqrt{1-kx}}{x} & x < 0 \\ \frac{2x+1}{x-1} & x > 0 \end{cases} \text{ at } x = 0$$

$$(II) \quad f(x) = \begin{cases} \frac{e^x-1}{\log(1+2x)} & x \neq 0 \\ K & x = 0 \end{cases} \text{ at } x = 0$$

$$(III) \quad f(x) = \begin{cases} \frac{1-\cos 4x}{x^2} & x < 0 \\ K & x = 0 \\ \sqrt{x} & x > 0 \end{cases} \text{ at } x = 0$$

17. For what values a and b

$$f(x) = \begin{cases} \frac{x+2}{|x+2|} + a & \text{if } x < -2 \\ a+b & \text{if } x = -2 \\ \frac{x+2}{|x+2|} + 2b & \text{if } x > -2 \end{cases}$$

Is continuous at  $x = -2$

18. Find the values of a, b and c for which the function

$$f(x) = \begin{cases} \frac{\sin[(a+1)x] + \sin x}{x} & x < 0 \\ \frac{c}{x} & x = 0 \\ \frac{\sqrt{x+bx^2} - \sqrt{x}}{bx^{3/2}} & x > 0 \end{cases}$$

Is continuous at  $x = 0$

$$19. \quad f(x) = \begin{cases} [x] + [-x] & x \neq 0 \\ \lambda & x = 0 \end{cases}$$

Find the value of  $\lambda$ ,  $f$  is continuous at  $x = 0$ ?

$$20. \quad \text{Let } f(x) = \begin{cases} \frac{1-\sin^3 x}{3\cos^2 x} & ; \quad x < \frac{\pi}{2} \\ a & ; \quad x = \frac{\pi}{2} \\ \frac{b(1-\sin x)}{(\pi-2x)^2} & ; \quad x > \frac{\pi}{2} \end{cases}$$

If  $f(x)$  is continuous at  $x = \frac{\pi}{2}$ , find a and b.

$$21. \quad \text{If } f(x) = \begin{cases} x^3 + 3x + a & x \leq 1 \\ bx + 2 & x > 1 \end{cases}$$

Is everywhere differentiable, find the value of a and b.

22. For what value of p

$$f(x) = \begin{cases} x^p \sin(1/x) & x \neq 0 \\ 0 & x = 0 \end{cases} \text{ is derivable at } x = 0$$

23. Differentiate  $\tan^{-1}\left(\frac{\sqrt{1-x^2}}{x}\right)$  w.r.t  $\cos^{-1}(2x\sqrt{1-x^2})$  where  $x \neq 0$ .

$$24. \quad \text{If } y = x^{x^x}, \text{ then find } \frac{dy}{dx}.$$

25. Differentiate  $(x \cos x)^x + (x \sin x)^{\frac{1}{x}}$  w.r.t.  $x$ .

26. If  $(x + y)^{m+n} = x^m \cdot y^n$  then prove that  $\frac{dy}{dx} = \frac{y}{x}$
27. If  $(x - y) \cdot e^{\frac{x}{x-y}} = a$ , prove that  $y \left( \frac{dy}{dx} \right) + x = 2y$
28. If  $x = \tan \left( \frac{1}{a} \log y \right)$  then show that
- $$(1+x^2) \frac{d^2y}{dx^2} + (2x-a) \frac{dy}{dx} = 0$$
29. If  $y = x \log \left( \frac{x}{a+bx} \right)$  prove that  $x^3 \frac{d^2y}{dx^2} = \left( x \frac{dy}{dx} - y \right)^2$ .
30. Differentiate  $\sin^{-1} \left[ \frac{2^{x+1} \cdot 3^x}{1+(36)^x} \right]$  w.r.t  $x$ .
31. If  $\sqrt{1-x^6} + \sqrt{1-y^6} = a(x^3 - y^3)$ , prove that
- $$\frac{dy}{dx} = \frac{x^2}{y^2} \sqrt{\frac{1-y^6}{1-x^6}}, \text{ Where } -1 < x < 1 \text{ and } -1 < y < 1 \text{ [HINT: put } x^3 \sin A \text{ and } y^3 \sin B]$$
32. If  $f(x) = \sqrt{x^2 + 1}$ ,  $g(x) = \frac{x+1}{x^2+1}$  and  $h(x) = 2x - 3$  find  $f'[h'(g'(x))]$ .
33. If  $\sec \theta - \cos \theta$  and  $y = \sec^n \theta - \cos^n \theta$ , then prove that  $\frac{dy}{dx} = n \sqrt{\frac{y^2+4}{x^2+4}}$
34. If  $x^y + y^x + x^x = m^n$ , then find the value of  $\frac{dy}{dx}$ .
35. If  $x = a \cos^3 \theta$ ,  $y = a \sin^3 \theta$  then find  $\frac{d^2y}{dx^2}$
36. If  $y = \tan^{-1} \left[ \frac{\sqrt{1+\sin x} - \sqrt{1-\sin x}}{\sqrt{1+\sin x} + \sqrt{1-\sin x}} \right]$  where  $0 < x < \frac{\pi}{2}$  find  $\frac{dy}{dx}$

## AOD

### Very Short Answer Type Questions (1 Mark)

- Find the angle  $\theta$ , where  $0 < \theta < \frac{\pi}{2}$ , which increases twice as fast as its sine.
- Find the slope of the normal to the curve  $x = a \cos^3 \theta$  and  $y = a \sin^3 \theta$  at  $\theta = \frac{\pi}{4}$ .
- A balloon which always remains spherical has a variable radius. Find the rate at which its volume is increasing with respect to its radius when the radius is 7cm.
- Write the interval for which the function  $f(x) = \cos x$ ,  $0 \leq x \leq 2\pi$  is decreasing

5. For what values of  $x$  is the rate of increasing of  $x^3 - 5x^2 + 5x + 8$  is twice the rate of increase of  $x$  ?
6. Find the point on the curve  $y = x^2 - 2x + 3$  where the tangent is parallel to x-axis.
7. Write the maximum value of  $f(x) = \frac{\log x}{x}$ , if it exists.
8. Find the least value of  $f(x) = ax + \frac{b}{x}$ , where  $a > 0$ ,  $b > 0$  and  $x > 0$ .
9. Find the interval in which the function  $f(x) = x - e^x + \tan(\frac{2\pi}{7})$  increases.
10. For the curve  $y = (2x + 1)^3$  find the rate of change of slope of the tangent.
11. Find the value of  $a$  for which the function  $f(x) = x^2 - 2ax + 6$ ,  $x > 0$  is strictly increasing.

**VERY SHORT ANSWER TYPE QUESTIONS (2 MARKS)**

12. Find the co-ordinates of the point on the curve  $y^2 = 3 - 4x$ , where tangent is parallel to the line  $2x + y - 2 = 0$
13. The sum of the two numbers is 8, what will be the maximum value of the sum of their reciprocals.
14. Find the maximum value of  $f(x) = 2x^3 - 24x + 107$  in the interval  $[1, 3]$
15. If the rate of change of Area of a circle is equal to the rate of change its diameter. Find the radius of the circle.
16. The sides of an equilateral triangle are increasing at the rate of  $2 \text{ cm/s}$ . Find the rate at which the area increases, when side is 10 cm.