TINY TOTS SCHOOL

(Senior Secondary, Affiliated to C.B.S.E.)

SUMMER VACATION HOMEWORK 2015-16

Class : IX

SUBJECTS

ENGLISH

- Read the two parts of the novel 'Gulliver's Travels' and write chapter vise summary of these parts.
- Prepare a file highlighting 'Child Labour' prevalent in your area. You can click the photographs also and paste these in that file. Also write about the problem of child labour in about 500 words giving ways to curb it.
- Follow the rule of 'Each One Teach One'. Write the name of the person and tell how you make him/her literate.

Hindi

फिल्में समाज का दर्पण होती हैं। वे समाज की वास्तविक दशा, नैतिक मूल्य, परंपराओं तथा आधुनिक समाज की बदलती अवधारणाओं को दर्शाती है। परंतु फिल्म निर्देशक पर ही एक फिल्म का आकार और भविष्य निर्भर करता है। भारतीय सिनेमा के गौरवशाली इतिहास में ऐसी कई नायाब और असाधारण फिल्में बनाई गई हैं जिनके निर्देशक अत्यंत प्रतिभाशाली थे।

निम्नलिखित ऐसे कुछ फिल्म निर्देशक हैं जिन्होने अपनी अमिट छाप छोड़ी है–सत्यजीत रे, गुरू दत्त, यश चोपड़ा, ऋषिकेश मुखर्जी, राज कपूर, बिमल राय, मनमोहन देसाई। इनमें से किन्ही तीन फिल्म निर्देशकों के बारे में, संगीत, कलाकारों एवं उनका सामाजिक संदेश के बारे में जानकारी एकत्र पर परियोजना तैयार करें।

परियोजना में निम्नलिखित बिन्दुओं का समावेश आवश्यक है –

- परियोजना का आकार ए4 हो।
- परियोजना हस्तलिखित हो व चित्रों का समावेश हो।
- परियोजना में न्यूनतम 12 पृष्ठ अनिवार्य रूप से हों।

Science

Activity :-

Put dried raisins or apricots in plain water and leave them for some time. Then place them into a concentrated solution of sugar and salt.

What do you observe? Give reason.

Ques.1 What is the significance of meristem in plant?

Ques.2 How does a desert cooler cool better on a hot dry day?

Ques.3 Explain why ice at $0^{o}C$ more effective in cooling than water at same temperature.

Ques.4 How does the water kept in an earthen pat (matka) become cold during summer.

Ques.5 Differentiate between plant and animal cell.

Ques.6 Differentiate between meristem and permanent tissue.

Ques.7 Draw labeled diagram of :

[a] Microscope [b] Sublimation of ammonium chloride process.

[c] Xylem [d] Collenchyma & Sclerenchyma

[e] Phloem [f] Prokaryotic cell

[g] Stomata

[h] Longitudinal section of shoot apex showing location of meristems.

SOCIAL SCIENCE

Disaster Management – Delhi

Keeping the above statement in mind , prepare a project on Getting acquainted with disaster management in Delhi as a part of your Disaster Management Project as per the following guidelines:

1. Highlight the following:
    a. Definition of Disaster.
    b. What is disaster management?
    c. What are the different disasters Delhi has encountered over the years? Prepare a list of the various disasters and its impact.
    d. What are the mitigation strategies to counter the future threats?
    e. Draw a list of hospitals and other emergency services in your locality.
    f. What are the possible disaster threats Delhi may face in future?

General Instructions:

1. The project should be hand written.
2. It should be well presented , researched and pictorial.
3. Cover page , table of contents , acknowledgements , bibliography , headings and sub headings are must.
4. Each section should be done on different colored A4 size sheets.
5. You also need to design a poster on Disaster mitigation awareness and include it in your project.
6. The nporject should be presented in a file.
7. The project should not exceed 12 pages.
8. Do not exceed 600 words.
9. The project carries 10 marks:

MATHEMATICS

1. Express $4\frac{1}{8}$ in decimal form.
2. Express $\frac{4}{11}$ in decimal form.
3. Without actual division, find which of the following rational numbers are terminating decimal :
   (a) $\frac{7}{8}$ (b) $\frac{5}{12}$ (c) $\frac{23}{80}$
4. Express each of the following decimal as fraction in simplest form :
   (a) $0.6666\ldots$ (b) $0.\overline{9}$ (c) $0.\overline{34}$
5. Find three different irrational numbers between the rational numbers $\frac{5}{7}$ and $\frac{9}{11}$.
6. Represent $\sqrt{2}$ on the real number line.
7. Locate each of the numbers $\sqrt{5}$, $\sqrt{6}$ and $\sqrt{7}$ on the real line.
8. Visualise $4.\overline{26}$ on the number line, upto 4 decimal places.
9. Represent $\sqrt{3.28}$ geometrically on the number line.

10. Rationalise the denominator :

(a) $\frac{6}{\sqrt{5}-\sqrt{2}}$ (b) $\frac{31}{7+3\sqrt{2}}$ (c) $\frac{\sqrt{a+b}+\sqrt{a-b}}{\sqrt{a+b}-\sqrt{a-b}}$

11. Evaluate each of the following :

(a) $(125)^{\frac{1}{3}}$ (b) $(64)^{-\frac{1}{3}}$ (c) $(216)^{-\frac{2}{3}}$ (d) $\left(\frac{121}{169}\right)^{-\frac{3}{2}}$

12. Prove that :

$$\left[\frac{x^p}{x^q}\right]^{p+q} \cdot \left[\frac{x^q}{x^r}\right]^{q+r} \cdot \left[\frac{x^r}{x^p}\right]^{r+p} = 1$$

13. Identify polynomials in the following :

(a) $5y^3 - y^2 + 7y + 9$ (b) $5z^4 - \frac{9}{z} + 2z^2 + 6$

14. Identify which expressions are polynomials in one variable and which are not?

(a) $3x^2 - 4x + 15$ (b) $y^2 + \sqrt{2}$ (c) $x^{20} + y^3 + t^{31}$ (d) $7y^2 - 9x + 3$

15. Write following polynomial in standard forms :

(a) $\frac{3}{2} - 5x + 6x^3 + x^4$ (b) $6x^7 + 9x^2 + 3 - 4x^5 - 28x$

16. Write coefficients of y^2 in each of the following :

(a) $5 + y^2 + y$ (b) $7 - y^2 + y^3$ (c) $\frac{\pi}{2}y^2 + y$ (d) $\sqrt{5}y - 7$

17. Write degree of each of the following polynomials :

(a) $9x^3 + 2x^2 + 5x$ (b) $4 - z^2$ (c) 3 (d) $11x - \sqrt{5}$

18. Find the value of the polynomial $5y^1 - 4y^2 + 3$ at :

(a) y = 0 (b) y = -1 (c) y = 2

19. If $x = \frac{4}{3}$ is a root of the polynomial $f(x) = 6x^3 - 11x^2 + ax - 20$, find the value of *a*.

20. Find the remainder when $P(x) = x^3 + x^2 + 2x + 3$ is divided by $x + 2$. (do both the division and remainder theorem).

21. The polynomials $kx^3 + 3x^2 - 3$ and $2x^3 - 5x + k$ when divided by $(x - 4)$ leaves the remainders r_1 and r_2 respectively. Find the values of *k* in each of the following, if :

(a) $r_1 + r_2 = 0$ (b) $2r_1 - r_2 = 0$

22. Using factor theorem, show that $(x + \sqrt{2})$ is a factor of $(2\sqrt{2}x^2 + 5x + \sqrt{2})$.

23. Expand :

(a) $(2x + 3y)^2$ (b) $(4x - 5y)^2$ (c) $\left(\frac{2x}{3} + \frac{3}{2x}\right)^2$

24. Evaluate :

(a) 105 × 105 (b) $(99)^2$ (c) $\frac{7.83 \times 7.83 - 1.17 \times 1.17}{6.66}$

25. If $x + \frac{1}{x} = \sqrt{5}$, find the value of :

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

26. If $2x + 3y = 8$ and $xy = 2$, find value of $4x^2 + 9y^2$.

27. Expand :

(a) $(x + 2y + 4z)^2$ (b)

28. If a + b + c = 0, and $a^2 + b^2 + c^2 = 16$, find the value of ab + bc + ca.

29. Write following in expanded form :

(a) $(3x + 4y)^3$ (b) $(2a - 3b)^3$ (c) $\left(x - \frac{2y}{3}\right)^3$

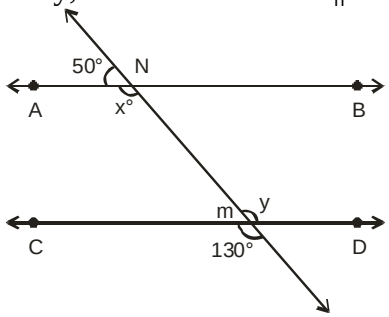
30. Factorize :

(a) $x^2 + 9x + 14$ (b) $6x^2 - 19x + 10$ (c) $x^2 + 11x + 30$

31. Factorize : $[a^3 + b^3 + c^3 - 3abc = (a + b + c)\ (a^2 + b^2 + c^2 - ab - bc - ca)]$

(a) $27x^3 + y^3 + z^3 - 9xyz$ (b) $8x^3 + y^3 + 27z^3 - 18xyz$

32. Find x and y; then show that AB || CD



33. If $(x + 1)$ is a factor of $f(x) = x^2 - 3ax + 3a - 7$, find the value of a.

34. If x and y be two positive real numbers such that $4x^2 + y^2 = 40$ and $xy = 6$, then find the value of $2x + y$.

35. If $x + y = 5$ and $xy = 6$ than find $x^3 - y^3$.

36. Expand $(4x - 2y - 3z)^2$ using suitable indentity

37. Write $(3x^2 - y)^3$ in expanded form.

38. Evaluate using suitable identity : $(102)^2$.

39. Evaluate the following products without multiplying directly: (i) 95×96 (ii) 104×96.

40. If y+1 is a factor of the polynomial $3y^2 + my$, then find the value of m.

41. Find the value of a when $ay^2 - 9y + 4a$ is divided by $2y - 1$ gives a remainder $\frac{5}{6}$.

42. Use suitable identities to find the following products:
(i) $(x + 4)(x + 10)$ (ii) $(3x + 4)(3x - 5)$

43. Check whether 7+3x is a factor of $3x^3 + 7x$.

44. If x and y be two positive real numbers such that $4x^2 + y^2 = 40$ and $xy = 6$, then find the value of $2x + y$.

45. Read the following passage and answer the questions given:
He was born on the island of Samos, and might have travelled widely in his youth, visiting Egypt and other places seeking knowledge. Around 530 BC, he moved to Croton, in Magna Graecia, and there set up a religious sect. He made influential contributions to philosophy and religions in the late 6th century BC. He is often revered as a great mathematician, mystic, and scientist. He is said to have died in Metapontum.
   a. Identify the mathematician and state his contributions. (1+3=4)
   b. Explain two types of proofs of theorem stated by him. (3x2=6)