# St. Mary's School, Dwarka <br> Holiday Homework <br> Class XII <br> Week 3 <br> Worksheet 3 

## Subject: English

M.M-25

## Q1. Read the following passage carefully.

1. A little boy used to play in the shade of a tree. One day the boy sat leaning against its trunk; he cried and sighed, "I am hungry."
2. "Eat my fruit", said the kind tree. And it bent down one of its branches. The little boy had his fill of the fruit and felt satisfied.
3. Many years passed and the boy grew up. Then, once again, he sat under the tree with a look of dejection and hopelessness. "What is it?", the trees asked. "My wedding day is barely a week away and I have nowhere to live." "Cut down my branches and build yourself a house," said the tree. The young man set to work immediately.
4. Time passed and now the young man was a sailor. And once again he sat under the tree with a look of remorse on his face. The tree asked what the matter was, he pleaded, "My Captain is crude, so to survive I must own a ship."
5. "Cut down my trunk and build a ship," suggested the tree.
6. The sailor grew old but once again he turned to the tree with a laden expression on his face. It was cold and the sailor leant on his stick trembling, "make a fire of me," said the stump of the tree. It soon burnt in the fire softly humming a tune.

Based on the understanding of the passage, answer the questions given below:
(1x5=5)
a) What was the nature of the tree?
b) What kind of a person was the man?
c) What is meant by 'set out to work immediately'?
d) The main qualities of the two characters in the passage are $\qquad$ .
e) What does the last line of the passage mean?

Q2. You are the General Manager of an organisation. You need a software engineer for your organisation. Look for an advertisement published in the newspaper under the classified column, cut and paste it in the notebook.

Q3. Write a letter to the Editor of National Herald, New Delhi about water scarcity in your locality suggesting ways to improve the position of water supply. You are Ramnath/ Reema of Ghaziabad. Word limit: 150-200.

Q4. Answer the given questions briefly in 30-40 words each.
a) What does M. Hamel say about the importance of language to an 'enslaved' people?
b) Mention the hazards of working in the glass bangles industry.
c) What was Franz tempted to do instead of going to school and being reprimanded?

## Q5. Read the extracts given below and answer the questions that follow:

I. Despite long years of hard labour, first as a tailor, then a bangle maker, he has failed to renovate a house, send his two sons to school. All he has managed to do is teach them what he knows- the art of making bangles.
a) Who has been labouring?
b) Which part of the country is being alluded to in this extract?
c) What does the writer say about the appalling reality of child labour?
II. '...but after the airport's
security check, standing a few yards away, I looked again at her, wan, pale as a late winter's moon...'
a) What did the poet observe once again upon reaching the airport?
b) How does the poet describe her mother's pale face?
c) Name the poetic device used in the given extract.

## Subject: Physics

## Objectives:

- Revision of concepts
- Application of the concepts to real life situations.
- Skills to carry out research work and develop scientific aptitude.


## Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question

Q1. Charge on a conducting metal sphere is present :
(a) on the surface of sphere
(b) inside the sphere
(c) outside the sphere
(d) both inside and outside of sphere

Q2. Shape of equipotential surface in uniform electric field will be:
(a) spherical and normal to electric field
(b) random
(c) circular and normal to electric field
(d) equidistant planes normal to electric field

Q3. Define Dielectric constant of a medium. Dielectric constant of a medium is 2 , find its electric permittivity in SI units.

Q4. An infinite line charge produces a field of $9 \times 10^{4} \mathrm{~N} / \mathrm{C}$ at a distance of 2 cm . Calculate the linear charge density.

Q5. A $500 \mu \mathrm{C}$ charge is at the centre of a square of side 20 cm . What is the work done in moving a test charge of $+2 \mu \mathrm{C}$ from one corner to diagonally opposite corner of square?

Q6. Two identical charges of $+5 \mu \mathrm{C}$ each are kept 50 cm apart in air. Compute (i) electric field, and (ii) force acting on a charge 2 nC at a point midway between the two charges.

Q7. A slab of material of dielectric constant $K$ has the same area as the plates of a parallel plate capacitor built have a thickness 3d/4. Find the ratio of the capacitance with dielectric inside it to its capacitance without the dielectric.

Q8. Using Gauss's law shown mathematically that for any point outside a thin spherical shell the electric field is the same as if the entire charge of the shell is concentrated at its centre.

Q9. (i) For a point charge, the graph between electric field versus distance is given by:
(a)

(b)

(c)

(d)


Justify your answer .
(ii). Find the potential at the centre of the square given below :


Q10 (i) A 600 pF capacitor is charged by a 200 V supply. It is then disconnected from the supply and is connected to another uncharged 600 pF capacitor. How much electrostatic energy is lost in the process
ii) A charge of 8 mC is located at the origin. Calculate the work done in taking a small charge of $-2 \times 10^{-9} \mathrm{C}$ from a point $\mathrm{P}(0,0,3 \mathrm{~cm})$ to a point $\mathrm{Q}(0,4 \mathrm{~cm}, 0)$, via a point $\mathrm{R}(0,6 \mathrm{~cm}, 9 \mathrm{~cm})$.


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## Subject - Chemistry

Q. 1 (a) Out of chlorobenzene and benzyl chloride, which one gets easily hydrolysed by aqueous

NaOH and why?
(b) Benzyl chloride is highly reactive towards $\mathrm{S}_{\mathrm{N}} 1$ reactions, why?
Q. 2 (a) Identify the chiral molecule in the following pair :

(i)

and (ii)

(b) Write the structure of the product when chlorobenzene is treated with methyl chloride in the presence of sodium metal and dry ether.
(c) Write the structure of the alkene formed by dehydrohalogenation of 1-bromo-1methylcyclohexane with alcoholic KOH .
Q. 3 (a) Write the IUPAC name of

(b) Predict all alkenes that will be formed by dehydrohalogenation of 2-bromopentane.
(c) Arrange the following halides in order of increasing $\mathrm{S}_{\mathrm{N}} 2$ reactivity : $\mathrm{CH}_{3} \mathrm{Cl}, \mathrm{CH}_{3} \mathrm{CH}_{2} \mathrm{Cl},\left(\mathrm{CH}_{3}\right)_{2} \mathrm{CHCl}$
Q. 4 (a) Predict the major product formed when sodium ethoxide reat with tert. Butyl chloride.
(b) Why is it necessary to avoid even traces of moisture during use of Grignard reagent?
(c) Which one of the following compounds is more reactive towards $\mathrm{S}_{\mathrm{N}} 2$ reaction and why? $\mathrm{CH}_{3} \mathrm{CH}(\mathrm{Cl}) \mathrm{CH}_{2} \mathrm{CH}_{3}$ or $\mathrm{CH}_{3} \mathrm{CH}_{2} \mathrm{CH}_{2} \mathrm{Cl}$
Q. 5 Write the product(s) formed when
(i) 2-Bromopropane undergoes dehydrohalogenation reaction.
(ii) Chlorobenzene undergoes nitration reaction.
(iii) Methylbromide is treated with KCN.
Q. 6 (a) How will you obtain bromo benzene from aniline?
(b) Write the major mono halogen derivative of

(c) Write the IUPAC name of $\mathrm{CH}_{3}-\mathrm{CHCl}-\mathrm{CH}_{2}-\mathrm{CH}=\mathrm{CH}_{2}$. 3
Q. 7 Write the structure of the following compounds:
(i) 1-Bromo-4-chlorobut-2-ene
(ii) 2,4-dinitrochlorobenzene
(iii) 3-Bromo-2-methylprop-1-ene
Q. 8 Following compounds are given to you:

2-Bromopentane; 2-Bromo-2-methylbutane; 1-Bromopentane
(i) Write the compound which is most reactive towards $\mathrm{S}_{\mathrm{N}} 2$ reaction.
(ii) Write the compound which is optically active.
(iii) Write the compound which is most reactive towards $\beta$-elimination reaction.
Q. 9 (a) Account for the following:
(i) Electrophilic substitution reaction in haloarenes occur slowly.
(ii) Haloalkanes, though polar, are insoluble in water.
(b) Arrange the following compounds in increasing order of reactivity towards $\mathrm{S}_{\mathrm{N}} 2$ displacement:

2-Bromo-2-methylbutane; 1-Bromopentane; 2-Bromopentane
Q. 10 What happens when :
(i) Ethyl chloride is treated with sodium iodide ( NaI ) in presence of acetone.
(ii) Chlorobenzene is treated with sodium metal in presence of dry ether.
(iii) Methyl chloride is treated with $\mathrm{KNO}_{2}$.

Write chemical equations in support of your answers.

## Subject - Biology

## Answer the following questions:

Q1. Define infant mortality rate and maternal mortality rate.

Q2. Why is population explosion and birth control an important area of concern as far as
reproductive health concerned?

Q3. Why is there a statutory ban on amniocentesis?
Q4. What is vasectomy and tubectomy?

Q5. Should MTP be legalised? Comment.

Q6. Why are copper IUDs considered effective as a contraceptive device.

Q7. Mention three simple principles to prevents STDs.

Q8. What are reasons of infertility amongst couples?

Q9. Explain in-vitro and in-vivo fertilisation with the help of examples.

Q10. Expand the following with reference to reproductive health

| GIFT | IVF |
| :--- | :---: |
| ZIFT | AI |
| ART | ET |
| IUD | HIV |
| ICSI | AIDS |

## Subject - Mathematics

## (Inverse Trigonometric Functions AND Matrices)

Q1. The value of $\sin ^{-1}\left(\cos \frac{33 \pi}{5}\right)$ is
a. (a) $\frac{3 \pi}{5}$
(b) $-\frac{\pi}{10}$
(c) $\frac{\pi}{10}$
(d) $\frac{7 \pi}{5}$

Q2.The value of $\cos ^{-1}\left(\cos \frac{5 \pi}{3}\right)+\sin ^{-1}\left(\sin \frac{5 \pi}{3}\right)$ is
a. (a) $\frac{\pi}{2}$
(b) $\frac{5 \pi}{3}$
(c) $\frac{10 \pi}{3}$
(d) 0

Q3. $\sin \left\{2 \cos ^{-1}\left(\frac{-3}{5}\right)\right\}$ is equal to
a.
(a) $\frac{6}{25}$
(b) $\frac{24}{25}$
(c) $\frac{4}{5}$
(d) $-\frac{24}{25}$

Q4. If $\theta=\sin ^{-1}\left\{\sin \left(-600^{\circ}\right)\right\}$, then one of the possible value of $\theta$ is
a. (a) $\frac{\pi}{3}$
(b) $\frac{\pi}{2}$
(c) $\frac{2 \pi}{3}$
(d) $-\frac{2 \pi}{3}$

Q5. If $3 \sin ^{-1}\left(\frac{2 \mathrm{x}}{1+\mathrm{x}^{2}}\right)-4 \cos ^{-1}\left(\frac{1-\mathrm{x}^{2}}{1+\mathrm{x}^{2}}\right)+2 \tan ^{-1}\left(\frac{2 \mathrm{x}}{1-\mathrm{x}^{2}}\right)=\frac{\pi}{3}$ then x is equal to
a.
(a) $\frac{1}{\sqrt{3}}$
(b) $-\frac{1}{\sqrt{3}}$
(c) $\sqrt{3}$
(d) $-\frac{\sqrt{3}}{4}$

Q6. If $4 \cos ^{-1} x+\sin ^{-1} x=\pi$, then the value of $x$ is
a. (a) $\frac{3}{2}$
(b) $\frac{1}{\sqrt{2}}$
(c) $\frac{\sqrt{3}}{2}$
(d) $\frac{2}{\sqrt{3}}$

Q7. If $\tan ^{-1} \frac{x+1}{x-1}+\tan ^{-1} \frac{x-1}{x}=\tan ^{-1}(-7)$ shen the value of $x$ is
a. (a) 0
(b) -2
(c) 1
(d) 2

Q8. If $\sin ^{-1} x-\cos ^{-1} x=\pi / 6$, then $x=$
a. (a) $\frac{1}{2}$
(b) $\frac{\sqrt{3}}{2}$
(c) $-\frac{1}{2}$
(d) $-\frac{\sqrt{3}}{2}$

Q9.In a $\triangle \mathrm{ABC}$, if C is a right angle, then

$$
\tan ^{-1}\left(\frac{a}{b+c}\right)+\tan ^{-1}\left(\frac{b}{c+a}\right)=
$$

a. (a) $\frac{\pi}{3}$
(b) $\frac{\pi}{4}$
(c) $\frac{5 \pi}{2}$
(d) $\frac{\pi}{6}$

Q10. The value of $\sin \left(\frac{1}{4} \sin ^{-1} \frac{\sqrt{63}}{8}\right)$ is
(a) $\frac{1}{\sqrt{2}}$
(b) $\frac{1}{\sqrt{3}}$
(c) $\frac{1}{2 \sqrt{2}}$
(d) $\frac{1}{3 \sqrt{3}}$

## Subject - Economics

Q1. Name some modern industries which were in operation in our country at the time of independence.
Q2. What was the aim of the policies pursued by the British during colonial rule?
Q3. Write a short note on commercialisation of agriculture during British rule?
Q4. Where was the zamindari system implemented by British in India? Discuss its features.

Q5. Discuss the condition of Indian agricultural sector on the eve of independence.
Q6. Discuss the state of industrial sector on the eve of independence.
Q7. Describe the role of public sector during British Rule.
Q8. State the factors responsible for the downfall of indigenous handicraft industries during British Rule.

Q9. Discuss the state of Indian foreign trade on the eve of Independence.
Q10.India experienced export surplus during colonial rule, then why was there drain of wealth from India during the same period.

## Subject - Computer Science

Q1 Difference between CHAR and VARCHAR data types with the help of an example.
Q2 How will you be removing a column in SQL?
Q3 Write a short note on ALTER TABLE Command.
Q4 Explain Mathematical functions in SQL.
Q5 Write any three characteristics of SQL.
Q6 Describe any three processing capabilities of SQL.
Q7 Write about various Operators in SQL:
Q8 Write a short note on Constraints.
Q9 Write SQL commands for (i) to (vi) on the basis of relations given below: BOOKS

| BOOKS |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| book_id | Book_name | author_name | Publishers | Price | Type qty |
| k0001 | Let us C | Sanjay mukharjee | EPB | 450 | Comp 15 |
| p0001 | Genuine | J. Mukhi | FIRST PUBL. 755 | Fiction 24 |  |
| m0001 | Mastering c++ | Kanetkar | EPB | 165 | Comp 60 |
| n0002 | Vc++ advance | P. Purohit | TDH | 250 | Comp 45 |
| k0002 | Near to heart | Sanjeev | FIRST PUBL. 350 | Fiction 30 |  |


| ISSUED Book_ID | Qty_Issued |
| :--- | :--- |
| L02 | 13 |
| L04 | 5 |
| L05 | 21 |

i. To show the books of FIRST PUBL Publishers written by P.Purohit.
ii. To display cost of all the books written for FIRST PUBL.
iii. Depreciate the price of all books of EPB publishers by $5 \%$.
iv. To display the BOOK_NAME,price of the books whose more than 3 copies have been issued.
v. To show total cost of books of each type.
vi. To show the detail of the most costly book.

Q10 Write SQL commands for (a) to (f) and write output for (g) on the basis of PRODUCTS relation given below:

|  |  | PRODUCT TABLE |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| PCODE PNAME | COMPANY | PRICE STOCK MANUFACTURE |  | WARRANTY |  |
| P001 TV | BPL | 10000200 | 12-JAN-2008 | 3 |  |
| P002 TV | SONY | 12000150 | 23-MAR-2007 | 4 |  |
| P003 | PC | LENOVO | 39000100 | 09-APR-2008 | 2 |
| P004 | PC | COMPAQ | 38000120 | 20-JUN-2009 | 2 |
| P005 | HANDYCAM | SONY | 18000250 | 23-MAR-2007 | 3 |

a) To show details of all PCs with stock more than 110 .
b) To list the company which gives warranty for more than 2 years.
c) To find stock value of the BPL company where stock value is sum of the products of price and stock.
d) To show number of products from each company.
e) To count the number of PRODUCTS which shall be out of warranty on 20-NOV-2010.
f) To show the PRODUCT name which are within warranty as on date.
$\mathrm{g})$. Give the output of following statement.
(i) Select COUNT(distinct company) from PRODUCT.
(ii) Select MAX(price)from PRODUCT where WARRANTY<=3

## Subject - Informatics Practices

Q1 Difference between CHAR and VARCHAR data types with the help of an example.
Q2 How will you be removing a column in SQL?
Q3 Write a short note on ALTER TABLE Command.
Q4 Explain Mathematical functions in SQL.
Q5 Write any three characteristics of SQL.
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Q7 Write about various Operators in SQL:
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| BOOKS |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| book_id | Book_name | author_name | Publishers | Price | Type qty |
| k0001 | Let us C | Sanjay mukharjee | EPB | 450 | Comp 15 |
| p0001 | Genuine | J. Mukhi | FIRST PUBL. 755 | Fiction 24 |  |
| m0001 | Mastering c++ | Kanetkar | EPB | 165 | Comp 60 |
| n0002 | Vc++ advance | P. Purohit | TDH | 250 | Comp 45 |
| k0002 | Near to heart | Sanjeev | FIRST PUBL. 350 | Fiction 30 |  |


| ISSUED Book_ID | Qty_Issued |
| :--- | :--- |
| L02 | 13 |
| L04 | 5 |
| L05 | 21 |

i. To show the books of FIRST PUBL Publishers written by P.Purohit.
ii. To display cost of all the books written for FIRST PUBL.
iii. Depreciate the price of all books of EPB publishers by $5 \%$.
iv. To display the BOOK_NAME,price of the books whose more than 3 copies have been issued.
v. To show total cost of books of each type.
vi. To show the detail of the most costly book.

Q10 Write SQL commands for (a) to (f) and write output for (g) on the basis of PRODUCTS relation given below:

|  |  | PRODUCT TABLE |  |  |
| :--- | :--- | :--- | :--- | :--- | :---: | :---: |
| PCODE PNAME | COMPANY | PRICE STOCK MANUFACTURE |  | WARRANTY |
| P001 TV | BPL | 10000 200 | 12-JAN-2008 | 3 |
| P002 TV | SONY | 12000150 | 23-MAR-2007 | 4 |
| P003 PC | LENOVO | 39000100 | 09-APR-2008 | 2 |
| P004 PC | COMPAQ | 38000120 | 20-JUN-2009 | 2 |
| P005 HANDYCAM | SONY | 18000250 | 23-MAR-2007 | 3 |

a) To show details of all PCs with stock more than 110 .
b) To list the company which gives warranty for more than 2 years.
c) To find stock value of the BPL company where stock value is sum of the products of price and stock.
d) To show number of products from each company.
e) To count the number of PRODUCTS which shall be out of warranty on 20-NOV-2010.
f) To show the PRODUCT name which are within warranty as on date.
$\mathrm{g})$. Give the output of following statement.
(i) Select COUNT(distinct company) from PRODUCT.
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## Subject - Psychology

Q1. Shweta has been writing for the school magazine and would like to pursue journalism. Which intelligence is her skill reflecting?

Q2. $\qquad$ are enduring beliefs about an ideal mode of behaviour.

Q3. High ability, creativity and commitment are found in individuals with which intelligence?
Q4. Does heredity influence intelligence?
Q5. Write a note on the test that can be given only to literate groups based on the type of items.
Q6. Shirin learnt an answer and was able to recall it exactly the way it had been learnt. According to Arthur Jensen what level of learning she is using?
Q7. Psychological attributes are multi-dimensional. Describe any three such attributes.
Q8. What are some of the erroneous practices associated with intelligence testing?
Q9. Which intelligence is associated with Indian culture? Write a detailed note on the same.
Q10.Explain "Maslow's humanistic approach keeping in mind an individual who is feeling low.

## Subject - Physical Education

1. Which one of the following methods is not used for preparing fixtures in league or round robin tournament?
(a) Staircase method
(b) Cyclic method
(c) Combination method
(d) Tabular method
2. In which type of tournament, a team once defeated gets eliminated from the tournament?
(a) League tournament
(b) Knock-out tournament
(c) Challenge tournament
(d) Round Robin tournament
3. In which tournament, strong teams may have the possibility to be eliminated in the preliminary round?
(a) League tournament
(b) Knock-out tournament
(c) Challenge tournament
(d) League cum league tournament
4. National Sports Day in India is celebrated every year on:
(a) 29th July
(b) 29th September
(c) 29th October
(d) 29th August
5. Describe the method of preparing fixture in knock-out tournament in detail.
6. What do you mean by tournament? Elucidate the importance of tournaments in detail.
7. What is league tournament? Explain the types, merits, and demerits of league tournament.
8. Discuss the objectives of extramural in detail.
9. Enlist the committees for organizing sports events and explain any eight committees in detail.
10. Write in detail about Healthy/Ideal weight maintenance.
