BAHRIA COLLEGE KARSAZ
SUMMER VACATIONS HOMEWORK – 2018
FOR CLASS XII (FEDERAL & KARACHI BOARD)

(PHYSICS)

Answer the following question:

i)   Explain the phenomenon of electric induction
ii)   Explain Coulomb's law and write mathematical form
iii)   Explain series combination.
iv)   What is meant by doping?
v)   How n-type, p-type semiconductors are formed?
vi)   Explain P-N junction?
vii)   What is forward and reverse biased diode
viii) Write down the properties of Alpha, Beta and Gamma rays. (Memorize minimum 3 points of each)
ix)   What do you mean by half life?
x)   What is meant by fission chain reaction? How can it be controlled?
xi)   What is fusion reaction?
xii)   What is the difference between potential Difference and (e.m.f) Electromotive force?
xiii) State Ohm's law and drive it.
xiv)   What are the factors upon which the resistance of the conductor depends? What is meant by specific resistance?
xv)   How are resistance connected in parallel? Write the characteristic features of this combination?
xvi)   What is Galvanometer? How we can use it for the measurement of the current and
xvii) potential difference?
xviii) What is direct current and alternating current?

Projects:
1.   How to make generator at home.
2.   Design a project to measure the pollution in the air.
3.   Make a water level indicator at home.

(PAKISTAN STUDIES)

*   Collect information and basic data of any 10 Islamic States.
*   Collect at least 30 main headlines (on current news) from any News paper (Urdu, English or any Regional Language).
*   Prepare multimedia presentation on any one of the following topics:
        i)   Pakistani Cultural heritage_ an attractive destination for tourism.
        ii) Regional languages of Pakistan: New trends and thoughts.
        iii) Importance of Pakistan's location in South Asia (with map illustration)
             (All given work must be submitted in typed form)

(COMMERCE)

Q1. Open your Young Savers bank account in any of the nearest branch of Bank Al Habib and list the procedure involved.
Q2. Collect and bring the documents relevant to bank transactions.
Q3. Draw a map of Pakistan and locate the following:
     * Dams   * Barrage   * Physical Regions
Q4. Draw a map of World and locate the following:
     * Continents   * Oceans   * Poles
Q5. Google the Financial Statements of any THREE Multinational Companies (Income Statement and Balance Sheet) and analyze the trends of financial performance and position over the years

(BIOLOGY)

FEDERAL BOARD
1. Make a multimedia presentation on topic Biological and Human welfare.
2. Read Latin roots for biological terms given in your book.
3. Collect innovative ideas for science projects to be executed in the college science fair.
4. Make a flow chart on how to extract insulin from transgenic bacteria.

KARACHI BOARD
1. Multimedia presentation
    a. Significance of biology
    b. Modern research in the field of biology
2. Design an experiment to show the process of:
    a. Transpiration
    b. Osmosis
3. Make a chart of native plant and animal species of Pakistan, illustrate with scientific name.
4. Create an innovative idea for science project based on requirements, presentation draft, expected results and application.

(MATHS)

Q1. For What value of K, $x - 2$ is a factor of the expression $x^3 - 4x^2 + Kx - 2$

Q2. Solve the equations by factorization method.
   i. $lmx^2 + (m^2 - ln)x - mn = 0$,   ii. $(p + q)z^2 + (p + 2q + r)z + (q + r) = 0$

Q3. Solve the equations by quadratic formula method:
   i. $\frac{1}{3}P^2 - \frac{1}{3}P + 1 = 0$ ii. $\frac{1}{a} + \frac{1}{b} = \frac{1}{a+b+y} - \frac{1}{y}$

Q4. Find all the cube roots of -64 :

Q5. Solve the following equation:
   $\sqrt{2x + 7} + \sqrt{x + 3} = 1$

Q6. Perform the matrix multiplication:
$$\begin{bmatrix} x & y & z \end{bmatrix} \begin{bmatrix} a & h & g \\ h & b & f \\ g & f & c \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix}$$

Q7. Solve the equations by Cramer's rule:
   $x + y = 5$
   $y + z = 7$
   $z + x = 6$

Q8. Find n and r , if :
   $^nP_r = 240$ $^nC_r = 120$

Q9. Expand by means of the binomial theorem:
   $\left(x + \frac{1}{x}\right)^7$

Q10. If $\tan\theta = -\frac{1}{2}$ and $P(\theta)$ is in the fourth quadrant, find the remaining trigonometric functions.

Q11. Prove that:
   i. $Sin^6\theta + Cos^6\theta = 1 - 3\,Sin^2\theta\,Cos^2\theta$ ii. $\frac{1 + Cos\theta}{Sin\theta} = \frac{Sin\theta}{1 - Cos\theta}$

Q12. Find the distance between the points:
   $A(-1, 4)$ and $B(3, -2)$

(CHEMISTRY)

Karachi Board
Q1. Make power point presentation from chapter 10 and 11 (Chemistry of life and chemical industries in Pakistan).

Federal Board
Q1. Make power point presentation from chapter Biochemistry, industrial chemistry, and environmental chemistry.

(ENGLISH)

FEDERAL BOARD

1. Write essays on the following topics. Each essay must be of 250 to 300 words:
   a. The Role of Students in National Development
   b. Importance of Print Media
   c. The Advantages of Reading
2. Make a list of 50 idioms and phrasal verbs and use each in a sentence.
3. Report Writing.
a. Suppose you are the Captain of your college sports team, write a report to the principal about the performance of the players.
b. Suppose you are the reporter of some newspaper agency, write a report to the editor describing a road accident you have witnessed.
4. Read the novel Good Bye Mr. Chips and note down the important phrases, statements and words you find difficult.
5. Make a list of 25 most challenging words and learn the spellings. You may go through newspapers and take help from internet.
6. Write an essay on "Merits and Demerits of usage of Gadgets."
7. Prepare a power-point presentation on the chapter 'Reflections on the Re-awakening East (Maximum slides:10)

KARACHI BOARD

1. Write essays on the following topics. Each essay must be of 250 to 300 words:
   a. Value of Discipline
   b. The Rights and Responsibilities of a Citizen
   c. Our Duties towards our Country
2. Make a list of 50 idioms and phrasal verbs and use each in a sentence.
3. Letter Writing:
   a. Write a letter to the Editor of an esteemed newspaper expressing your views on the need of technical education for students.
   b. Write a letter to the Editor of an esteemed newspaper expressing your views on the importance of sports facilities for the citizens.
4. Read the novel The Prisoner of Zenda and note down the important phrases, statements and words you find difficult.
5. Make a list of 25 most challenging words and learn the spellings. You may go through newspapers and take help from internet.
6. Write an essay on "Merits and Demerits of usage of Gadgets."
7. Prepare a power-point presentation on the chapter 'Reflections on the Re-awakening East (Maximum slides:10)

(URDU)

KARACHI BOARD

۱۔ شامل نصاب سبق ''سیرتِ محمدی کی جامعت'' از ''سلیمان ندوی'' کی روشنی میں ۱۰۰ الفاظ پر مشتمل مضمون تحریر کیجیے۔

۲۔ شاملِ نصاب غزلیات میں سے کوئی چھ شاعروں کی غزلیات کے مطلع خوش خط تحریر کرکے لائیں۔ شاعر کا نام بھی لکھیے۔

۳۔ خوش خطی ایک عمدہ ہنر ہے، اس حوالے سے نصاب میں شامل نظم کو خوش خط لکھ کرلائیں۔

۴۔ شامل نصاب افسانہ ''بدلہ'' کے مطالعے سے ہمارے معاشرے کی کن اخلاقی قدروں کے بارے میں پتہ چلتا ہے اپنی رائے تحریر کیجیے۔

۵۔ شامل نصاب سبق ''عزم و جزم'' از ''سرسید احمد خان'' کا مطالعہ کیجیے اور عزم و جزم کی ہماری زندگی میں اہمیت کے بارے میں مختصراً اظہارِ خیال کیجیے۔

FEDERAL BOARD

۱۔ درج ذیل عنوانات پر ۲۵۰ الفاظ پر مشتمل مضمون لکھیں۔

۱۔ ایک ہوں مسلم حرم کی پاسبانی کے لیے

۲۔ اسلام میں عورت کا مقام

۲۔ اصنافِ نثر: ناول، افسانہ، مضمون، ڈرامہ، خاکہ کی تعریف یاد کریں۔
کتاب میں موجود اسباق میں اصنافِ نثر کی نشاندہی کریں۔

۳۔ حصہ گرائمر میں موجود حروفِ جار، عطف کی تعریف مع امثال یاد کریں۔

۴۔ نصاب میں موجود غزلِ اقبال، مصحفی کی غزل کے مقطع کی خوش خطی کریں۔