DELHI PUBLIC SCHOOL

GAYA

CLASS – XI ASSIGNMENT FOR DIWALI VACATION 2017–18

Instruction: – Kindly do your assignment work in assignment copies of the subjects.

SCIENCE

Subject : English

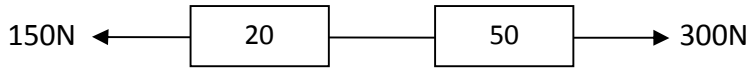
1. You are Ms. Veena Bhasin, Vice Principal of Mata Jai Kaur Public School, Mumbai. Write a notice informing students of classes XI and XII about the special classes being organized in collaboration with British Council to develop effective communication skills. Include relevant details.
2. Design a poster on awareness campaign launched by Municipal Corporation of your zone to prevent spread of diseases like Dengue, Malaria and Chikungunya.
3. You are Amit Wadhwa staying at 78, Kalkaji, N Delhi. Last month you bought an inverter installed at your house through 'Mechanical World', R.K. Puram, N Delhi. Now you find that the inverter is not working properly and the electrician who examined it at your request has told you that it is having some technical defect. Write a letter to the dealer asking him to replace it immediately under the terms and conditions of the deal.
4. There is a craze among youth for sports bikes and very often they indulge in stunts to attract the attention from the public. This results in violation of law and order and cases of road rage have also been reported by the traffic police. Despite a ban on this activity, youngsters come out on the road copying the stunts from films. Write an article in 125 words on 'stunt bikers', the dangers they are prone to and give suggestions on obedience of traffic rules on the road.
5. Comment on the significance of the title 'The Address' written by Marga Minco.

Subject : Mathematics

1. Prove that the equation of the straight line upon which the length of the perpendicular from the origin is p and this perpendicular makes an angle α with $x\text{-}axis$ is $x\cos\alpha + y\sin\alpha = p$.
2. Prove that the equation of the straight line passing through (x_1, y_1) and making an angle θ with the positive direction of $x\text{-}axis$ is $\frac{x-x_1}{\cos\theta} = \frac{y-y_1}{\sin\theta} = r$, where r is the distance of the point (x, y) on the line from the point (x_1, y_1).
3. Prove that $8\cos^3\frac{x}{3} - 6\cos^3\frac{\pi}{9} = 1$
4. Prove that $\tan x + \tan\left(\frac{x}{3} + x\right) - \tan\left(\frac{\pi}{3} - x\right) = 3\tan 3x$

Subject : Physics

1. Two blocks of masses 20 kg and 50 kg are lying on horizontal floor (u=0.5). Initially string is stretched and blocks are at rest. Now, two forces 300N and 150N is applied on two blocks as shown in figure. The acceleration of 20kg block is 2.5k m/s^2. Find the value of k.



2. An object is projected with a speed of 20 m/s at an angle of 30^{o} from the vertical. Find the following :-

   (a) Horizontal Range (b) Vertical Range

   (c) Time of flight (d) Equation of trajectory

3. Pushing force making an angle θ to the horizontal is applied on a block of weight W placed on a horizontal table. If the angle of friction is ∅, the magnitude of force required is :

   (a) W $cos\emptyset$ / $cos\ (\theta - \emptyset)$

   (b) W $sin\emptyset$ / $cos\ (\theta + \emptyset)$

   (c) W $tan\emptyset$ / $sin\ (\theta - \emptyset)$

   (d) W $sin\emptyset\ tan\ (\theta - \emptyset)$

Subject : Chemistry

1. Write the real gas equation. Write the unit of constants used in it.
2. Find energy of the outermost electron of Hydrogen atom.
3. Find minimum wavelength of the wave emitted in balmer series for Hydrogen atom.
4. Find the mole fraction of a 2m aqueous solution of NaOH.
5. Draw molecular orbital diagram of $O2^{+}$, $O2^{-}$, & O^{2-}_{2}

Subject : Biology

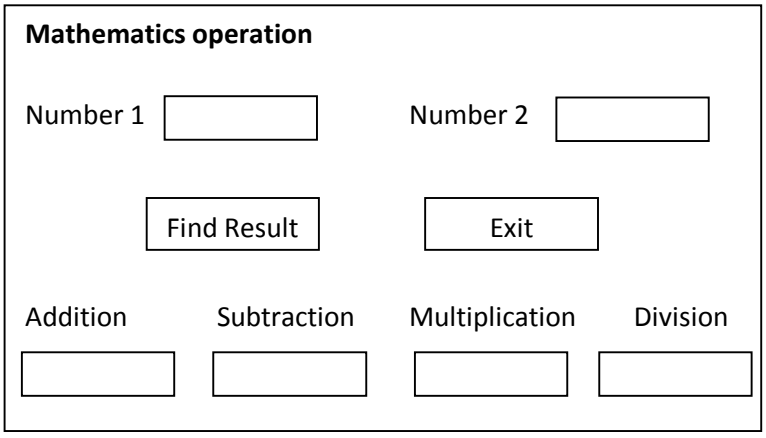
1. Explain Mitosis and Meiosis cell division with well labeled diagram.
2. What is Cardiac Cycle? Explain with diagram.
3. Write salient features of phylum coelenterata, Annelida, Echinodermata, Pisces and Mammalia with examples.

Physical Education

1. Write the biography of P.V. Sindhu.

Subject : Information Practice

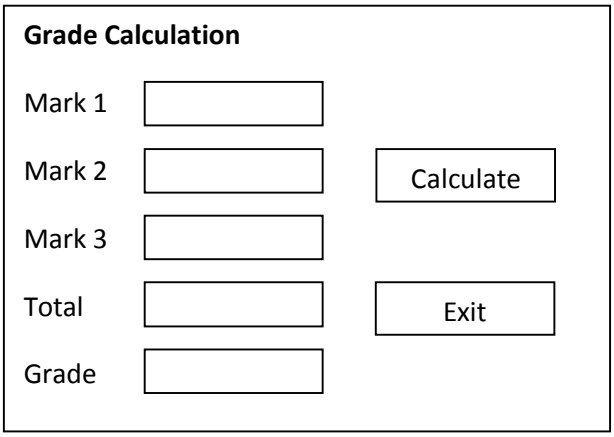
1. Create Java Desktop application to input any two numbers and find the addition, subtraction, Multiplication and division results. The following is the screen used to perform Mathematical operation.



(i) Write the code for find Result button to find mathematical operations in respective text-boxes.

(b) Write the code for Exit button to Exit application.

2. Create Java Desktop Application to enter the marks in 3 subjects and calculate total and assign grade if total > = 200 grade is 'A' otherwise grade is 'B'. The follow screen used to calculate grade.



(i) Write the code for calculate button to display total and grade txttot and txtgrade text boxes respectively.

(ii) Write the code for Exit button Esc – button to exit application.

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