

Ramakrishna Mission Residential College(Autonomous)

Narendrapur, Kolkata-700103

Sample Question for Admission Test 2016

Subject: Economics

Objective Questions

1. Answer *any one* question. (Limit yourself to 600 words.)
 - a. Many people say that the internet is the most important invention ever. Do you agree with this? If not, what do you believe to be more important? Use specific reasons and examples to support your opinion.
 - b. Which do you feel is more important in your life: security or freedom and independence? Use reasons and specific examples to support your opinion.
 - c. Which is more important for success: the natural ability you are born with or hard work? Explain your opinion, using specific reasons and examples.

Mathematics

2.
 - a. If ω is a complex cube root of unity and $(1 + \omega)^7 = A + B\omega$, find the value of A and B.
 - b. If $\tan a + \tan \beta$ are the roots of the equation $ax^2 + bx + c = 0$ find out the value of $\tan(a + \beta)$.
 - c. If three positive real numbers a,b,c are in A.P, with $abc=4$, then find the minimum value of b.
 - d. Find the maximum number of different permutation of 4 letters of the word EARTHQUAKE.
 - e. If the sum of binomial coefficients in the expansion of $(x + \frac{1}{x})^{2n-1}$ is 64, find the term independent of x.
 - f. On a multiple choice examination with three possible answers (out of which only one is correct) for each of the five questions, what is the probability that a candidate would get four or more correct answers just by guessing?
 - g. Show that the altitude of the right circular cone of maximum volume that can be inscribed in a sphere of radius R is $\frac{4R}{3}$.
 - h. Using the method of integration, find the area of the triangle ABC, coordinates of whose vertices are A (2, 0), B (4, 5) and C (6, 3).
