



# HIM ACADEMY PUBLIC SCHOOL

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## Sample Entrance Test - 2017 Class - 10+2

### English

Time : 30 min.

Max. Marks - 20

#### 1. Read the following passage and answer the questions that follow:-

1. Nothing brings into focus the need to retain English as the national language at the educational and political levels better than the question of the medium of instruction for medical education.

2. One could envisage the objections to the change of medium from English to regional languages. The uphill nature of the task and the cost involved in translating the vast number of books. The inadequacy of the regional languages to express the medical concepts and the technical terms which medical science abounds in. The likelihood of the translation being inaccurate and unreliable and becoming out of date by the time it comes out, with the original books having, in the meantime, run into revised editions. The need for students and professors to keep pace with the advances in medical science and to enable students to go abroad or to other states for further studies, research or employment.

Medical practitioners will suffer isolation, denied contact with their brethren elsewhere and inability to participate in national and international seminars and conferences. The explosions of knowledge in medical science in this century, as in other branches of science, has indeed phenomenal and choosing and translating even the most important books in the vast literature that has developed will certainly be a stupendous task. As translations will cater only for the students of the state, it will not be a lucrative proposition of the translator and the state may have to stop to organise and subsidise the translations in a big way inflicting an additional burden on the tax payer. And who can guarantee the accuracy of the translations which may have also become out of date by the time, they are published. With the rapid progress in all branches of medical that has to translated will be awesome. If each state introduces its own regional language as the medium of medical education in its colleges, the isolation of the profession will become complete.

3. In the absence of common medium, free exchange of views among the medical men of different states will not be possible. The All India Medical Council will find it difficult to evolve a uniform syllabus and maintain proper standards.
4. The migration of students from one university to another will be ruled out. This situation can be avoided only by adopting a common medium and none of the regional languages can serve this purpose. Hence there is no sense substituting English with another language. The regional languages however can be used as the medium for the courses prescribed for sanitary inspectors, health officers and para-medical staff where the emphasis is on the preventive aspect of medicine.
5. The examples of Russia, China and Japan are often cited to show that some nations use their own languages for medical education. Russia is well developed modern language with a rich literature.
6. Although Russia is a multilingual country with as many as 128 languages, Russian is spoken by about 75 percent of the population. Russia encourages the study of foreign languages, especially English, for which it has established schools which are said to be popular. Japan and China are not multilingual like India.
7. Japan has been studying Western science and technology for over a century incorporating into its language thousands of words from English and other European languages. The country is actually making earnest efforts to spread the knowledge of English among the people.
8. According to a recent New York Times report, the study of English is spreading fast and is being given high priority by the Chinese Government, which has embarked on a "crash programme for the spread of English education. In Beijing, one million copies of the Radio Peking English Course Guide have been sold. In addition to this, several million English teaching records have been sold.
9. China plans to invite every year 100 foreigner teachers to train its teachers in the Science and Engineering Universities. Since the days of Zhou-En-Lai, there has been an increasing use of the Roman script to facilitate the adoption of International Scientific and technological terms in the language.
10. While Japan and China are making efforts to spread the knowledge of English among their people, strangely enough in India, some are urging the centre to banish English that has remained in use as a link language for over 150 years and has given a boost to industry, science and technology. Let us not sacrifice the unity and progress of our country at the altar of the linguistic fanaticism.

**Questions :-**

- a) 1. What focuses most the need to retain English as the national language?
  2. Mention the two things that will not be possible in the absence of a common medium?
  3. What does the recent New York Times report say?
  4. What does the passage say about Russia? [4×2=8]
- b) Find words from the passage that mean the same as the following :-
- a) hard task (para 2)
  - b) Religious intolerance (para 10) [2]

**Q.2 Write down a paragraph on one of the following topics in about 200-225 words :-**

1. Total Education means the development of not only mind, spirit and character but body too. Games & sports, therefore are an essential part of school curriculum. What are your views on the issue. Write them in the form of a paragraph.
2. The Importance and Power of women. [10]

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**Physics**

**Time : 30 min.**

**Max. Marks - 20**

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1. What is one dimensional motion? [1]
  2. What is displacement? [1]
  3. Plot a position-time graph for an object in uniform motion. [1]
  4. Define collinear vectors. [1]
  5. Can a body be said to be at rest as well as in motion at the same time? [1]
  6. Define one newton. [1]
  7. What is power? [1]
  8. Give an example of positive work. [1]
  9. What is the difference between g and G? [1]
  10. Define volume strain. [1]
  11. Why deep water runs slow? [2]
  12. A man standing on the platform just near the railway line be sucked in by fast moving train. Explain. [2]
  13. What are damped oscillations? Give one example. [2]
  14. What happens to the period of a simple pendulum if its length is doubled? [2]
  15. A mass of 10kg is acted upon by a force of 2N. Starting from rest, how much is distance covered by the mass in 20s? [2]

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## Chemistry

**Time : 30 min.**

**Max. Marks - 20**

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1. An atomic orbital  $n=4$  what are the possible values of  $l$  and  $m$ ? [1]
2. Write the general electronic configuration of P-block elements. [1]
3. State Aufbau principle. [1]
4. Indicate the number of unpaired electron in P. [1]
5. Define dipole moment. [1]
6. Write the IUPAC name of the given organic compound.  
 $(\text{CH}_3)_2\text{CH}-\text{CH}=\text{CH}_2$  [1]
7. What is sublimation? [1]
8. Why is sodium metal kept under Kerosene oil? [1]
9. What are boranes? [1]
10. What is metamerism? Give an example. [1]
11. What is Markownikoff's rule explain with example. [2]
12. How many  $\sigma$  and  $\pi$  bonds are present in  $(\text{CN})_2\text{CH}=\text{CH}(\text{CN})_2$ ? [2]
13. Calculate Bond order in  $\text{O}_2$  and  $\text{O}_2^{2-}$ . [2]
14. Explain why anion has larger radii than their parent atoms? [2]
15. Why in building of the atoms the filling of 4s-orbitals takes place before 3d-orbitals? [2]

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## Biology

**Time : 30 min.**

**Max. Marks - 20**

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1. Who had given two kingdom system of classification? [1]
2. What are viruses? [1]
3. Which organelle is called 'Suicidal bag of the cells'? [1]
4. Define Thecodont. [1]
5. Define the term Taxonomy. [1]
6. Define Aestivation. [1]

7. What is Periderm. [1]
8. Define vernalisation. [1]
9. What is serum? [1]
10. What is meant by the term Ammonotelism? [1]
11. Why do we call our Heart myogenic? [2]
12. What are the characteristic features of Euglenoids? [2]
13. What are the difference between xylem and phloem? [2]
14. Define Respiratory quotient. What is its value for Carbohydrates. [2]
15. Why is mitosis called equational division? [2]

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**Maths**

**Time : 30 min.**

**Max. Marks - 20**

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**[Section - A]**

1. Write complex number  $Z = i^5 + i^{10} + i^{15}$  in  $a + ib$  form.
2. Find  $x$  if  $\frac{1}{4!} + \frac{1}{5!} = \frac{x}{6!}$ .
3. Find the number of permutations of the letters of the word 'ALLAHABAD'.
4. Find the number of terms in the expansion of  $\left(x + \frac{1}{x}\right)^6$ ,  $x \neq 0$ .
5. Find the value of  $\lim_{x \rightarrow 0} \frac{\sin ax}{\sin bx}$ .
6. Find the derivative of  $3\cot x + 5 \operatorname{Cosec} x$ .

[6×1=6]

**[Section - B]**

7. Evaluate  $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2}$ .
8. Find the derivation of  $y = \frac{\sin(x+a)}{\cos x}$  w.r.t.x.
9. Find the 4th term of the expansion  $(x - 2y)^{12}$ .
10. IF  ${}^n C_4 = {}^n C_6$  find  ${}^{12} C_n$ .
11. Solve the equation  $-x^2 + x - 2 = 0$ .

12. Find modulus of complex number  $z = \frac{1}{1+i}$ .

13. Find the slope of the line joining by the points A(-2,6) ad (4,8). [7×2=14]