

English Language for Competitive Exams
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Week - 02
Lecture – 06
Reading - Comprehending Scientific Passages

Hello friends. So, continuing with our reading part for our course English language for competitive purposes or competitive exams. Just a few tips or general instructions before you go for any such exam; remember some of the exams are built such in such a way that they will test not just a comprehension, but also your speed. So, this is very important that you practise your reading comprehension abilities, somewhere at home do lot of practise exams.

Typically these questions are easier or may be easier, but there will be so many that you will soon run out of time. Remember practise makes a man perfect; this is a cliché, but very true for the kind of exam that you are going to take. Practise reading any material every day and time yourself time yourself always keep stop watch somewhere, a clock somewhere, ask herself are you able to understand the basic meaning the gist of a paragraph within let us say 3 to 4 minutes.

Unlike opinion based questions in these kinds of questions you will have to formulate the answer yourself. This means that the work of grammar and sentence construction is up to you, you will have to frame the answer accordingly remember it is a test of your writing as much as it is a test of your comprehension, and always take the instructions very seriously do not exceed the specific or a specified time limit, line limit and always use simple words when answering. Do not fall into the trap of showing off your vocabulary that is best saved for essays.

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PASSAGE 1

For an oncologist in training, too, leukaemia represents a special incarnation of cancer. Its pace, its acuity, its breathtaking, inexorable arc of growth forces rapid, often drastic decisions; it is terrifying to experience, terrifying to observe, and terrifying to treat. The body invaded by leukaemia is pushed to its brittle physiological limit—every system, heart, lung, blood, working at the knife-edge of its performance. The nurses filled me in on the gaps in the story. Blood tests performed by Carla's doctor had revealed that her red cell count was critically low, less than a third of normal. Instead of normal white cells, her blood was packed with millions of large, malignant white cells—blasts, in the vocabulary of cancer. Her doctor, having finally stumbled upon the real diagnosis, had sent her to the Massachusetts General Hospital.

Now, let us try to look at this particular sample passage and solve it please look at the slide here. I will read it for you, for an oncologist in training; too, leukaemia represents a special incarnation of cancer. Its pace, its acuity, its breathtaking, inexorable arc of growth forces rapid, often drastic decisions; it is terrifying to experience terrifying to observe, and terrifying to treat.

The body invaded by leukaemia is pushed to it is brittle physiological limit-every system, heart, lung, blood, working at the knife-edge of its performance. The nurses filled me in on the gaps in the story. Blood tests performed by Carla's doctor had revealed that her red cell count was critically low, less than a third of normal. Instead of normal white cells, her blood was packed with millions of large, malignant white-cells blasts, in the vocabulary of cancer. Her doctor, having finally stumbled upon the real diagnosis, had sent her to the Massachusetts General Hospital.

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Question 1-5. You have 10 minutes to read the passage and answer all questions.

1. What is a special incarnation of cancer? Answer in one word.
2. What was peculiar about Carla's cells? Answer in one-two lines.
3. Why is leukaemia terrifying? Answer in two-three lines.
4. What does 'brittle' refer to?
 - a) final
 - b) bodily
 - c) breakable
 - d) highest
5. Which are the two groups that leukaemia tests?
 - a) Doctors and nurses
 - b) Oncologists and patients
 - c) The doctor and Carla
 - d) The oncologists and the author

Here are your questions, remember to read the instructions very clearly please look at the slide; you have 10 minutes to read the passage and answer all questions, you can save the passage go through it save these questions and then try to solve these.

Let us discuss the answers; now first question is, first answer is a clearly leukaemia; and then second going to the second one what is Carla's problem her red blood cell count was very low, instead of normal white cells, her body was full of malignant blasts, we also have that question why is leukaemia so terrifying? Because it is a fast growing cancer that cannot be stopped, it pushes the body to its limit and it is difficult to treat. Next question brittle I would recommend that you open your dictionaries always look at a dictionary, always keep your dictionary at hand when you are taking this course or listening to these discussions with me, it would always benefit you much more if you do some amount of or rather large amount of self reading and self teaching.

Brittle means what? To give you an answer right away on the spot it is fragile or breakable and then last question; who are the most tested people here. So you have to remember oncologist and patients because it is difficult for both of them, they are the two most tested or exposed groups to be to the experience of looking at. For an oncologist it is a challenge for a patient of course, he has or she has to leave through the terrifying and horrifying experience all through. These typos in the passages let me take you back their instead of normal white cells please look at the slide; it should be normal red cells.

Her blood was packed with millions of large malignant white cells blasts in the vocabulary of cancer.

Now, I would like you to take a list of words, please take them down they all belong to the passage and I want you to look up the meaning as well as the class of these words by class we mean noun pronoun adjective it is not number it is not singular plural, but I am talking about whether a word qualifies as a noun or an adjective or an adverb as a pronoun as a conjunction. So, this is what I want you to do look up the word classification as well as the meaning. So, what is incarnation, second word acuity you have come across that word next word, inexorable physiological and malignant.

So, I will repeat incarnation, acuity, inexorable physiological, malignant. Look up the dictionaries incarnation is a noun remember it is a person who embodies in the flesh of a deity spirit or quality, but it can all that is a literal meaning incarnation you are an incarnation of something; you know great, courage or an incarnation of god and doctor is often called incarnation of god for patients so is that. Acuity it is a noun it means sharpness or keenness of thought vision or hearing.

You often say acuity intellectual acuity. Let us talk about inexorable; inexorable is an adjective remember all these words ending with an a b l e. So, it is impossible to stop or prevent. The seemingly inexorable march of new technology, and let us and what is physiological? It is an adjective again it is related to the way in which a living organism or bodily part functions, malignant is adjective it could be malignant disease like cancer or it can also be malignant nature in Shakespeare. I AGOS malignant nature that is you know so full of jealousy and rage against or (Refer Time: 08:54) malignant nature malignant, temperament malignant tang people who have a wicked tongue, but in physiological terms in medical terms we use it for something which is very infectious very virulent like or as an malignant tumour.

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PASSAGE 2

Roiling underneath these medical, cultural, and metaphorical interceptions of cancer over the centuries was the biological understanding of the illness—an understanding that had morphed, often radically, from decade to decade. Cancer, we now know, is a disease caused by the uncontrolled growth of a single cell. This growth is unleashed by mutations—changes in DNA that specifically affect genes that incite unlimited cell growth. In a normal cell, powerful genetic circuits regulate cell division and cell death. In a cancer cell, these circuits have been broken, unleashing a cell that cannot stop growing. That this seemingly simple mechanism—cell growth without barriers—can lie at the heart of this grotesque and multifaceted illness is a testament to the unfathomable power of cell growth. Cell division allows us as organisms to grow, to adapt, to recover, to repair—to live. And distorted and unleashed, it allows cancer cells to grow, to flourish, to adapt, to recover, and to repair—to live at the cost of our living. Cancer cells can grow faster, adapt better. They are more perfect versions of ourselves.

Look at the second passage now. Roiling underneath these medical, cultural, and metaphorical interceptions of cancer over the centuries were the biological understanding of the illness—an understanding that had morphed, often radically, from decade to decade. Cancer, as we know, is a disease caused by the uncontrolled growth of a single cell. This growth is unleashed by mutations—changes in DNA that specifically affect genes that incite unlimited cell growth. In a normal cell, powerful genetic circuits regulate cell division and cell death.

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Questions 1-4. You have 10 minutes to read the passage and answer all the questions.
ANSWER WITHIN TWO-THREE LINES.

1. Why are cancer cells 'more perfect versions of ourselves'?
2. What is the simple bodily mechanism that brings about cancer?
3. How is cancer cell growth unleashed?
4. What does 'an understanding that has morphed' refer to?

Now, look at the questions. You have ten minutes to read the passage and answer the questions into 2 to 3 lines. Why are Cancer cells more perfect versions of ourselves, what is the simple bodily mechanism that brings about cancer? Question 3 how is cancer cell growth unleashed and question 4 what does an understanding that has morphed refer to. So, cancer cells answers the wide and grow without dying therefore, they are better version of our self. They can repair themselves faster and adapt to changes better than regular cells.

Next answer is the ability of cells to grow is controlled by the body through cell death and division, but these crucial controls are absent in the case of cancer cell and this causes cancer. So, this is the response to what causes cancer. And then scan about the question on cancer cell growth which is caused by unlimited cell division, which is unleashed by DNA mutations, and what is the answer to the last one understanding that as morphed, it refers to the changing ideas regarding cancer and it is origin and growth this has changed radically over the yes.

I would like you to take down a list of words for vocabulary development, as earlier please look at the dictionary while sorting out. First word is morphed m o r p h e d, next word is incite, next is grotesque and last one is unfathomable. Please take some time now morphed is a verb, you undergo or something that undergoes or causes to undergo a gradual process of transformation. So, now, this the child has morphed into moody

teenager, the angelic child morphed into a moody teenager. So, changed transformed; incite is a verb which means encouraging or twister or violent behaviour.

So, he was incited and provoked therefore, he reacted in such a way. Grotesque is comically or repulsively ugly or distorted, a figure wearing a grotesque mask. And unfathomable is an adjective, it is again an adjective like grotesque it is an adjective; it means that something that cannot be fully explored or understood human body is unfathomable. In spite of so much of research and progress in medicine human body still remains an unfathomable area.

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PASSAGE 3

Virchow entered medicine in the early 1840s, when nearly every disease was attributed to the workings of some invisible force: miasmas, neuroses, bad humours, and hysterias. Perplexed by what he couldn't see, Virchow turned with revolutionary zeal to what he could see: cells under the microscope. In 1838, Matthias Schleiden, a botanist, and Theodor Schwann, a physiologist, both working in Germany, had claimed that all living organisms were built out of fundamental building blocks called cells. Borrowing and extending this idea, Virchow set out to create a "cellular theory" of human biology, basing it on two fundamental tenets. First, that human bodies (like the bodies of all animals and plants) were made up of cells. Second, that cells only arose from other cells—*omnis cellula e cellula*, as he put it. The two tenets might have seemed simplistic, but they allowed Virchow to propose a crucially important hypothesis about the nature of human growth. If cells only arose from other cells, then growth could occur in only two ways: either by increasing cell numbers or by increasing cell size. Virchow called these two modes hyperplasia and hypertrophy.

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Questions 1-4. You have 10 minutes to read the passage and answer all the questions.

ANSWER WITHIN TWO-THREE LINES.

1. Why was Virchow perplexed with the state of medicine?
2. What are the two main ideas of cellular theory?
3. What did Schleiden and Schwann claim?
4. Explain hyperplasia and hypertrophy.

Look at the questions here, why was Virchow perplexed with the state of medicine, what are the two main ideas of cellular theory, what did Schleiden and Schwann claim and explain hyperplasia and hypertrophy.

Let us discuss the answers. So, question one why was Virchow perplexed with the state of medicine? He was perplexed by the understanding the diseases were caused by things one could not see. So, that is why he started cell study and what is the first main tenets of cellular theory is that human body is composed of cells, and the second is that all cells are born of other cells. About the question on Schleiden and Schwann what did they claim? They claim their cells were the fundamental building blocks of all living organisms and what is hyperplasia if the increase of cell numbers, hypertrophy they increase in cell size.

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PASSAGE4

Since the time of Vesalius, surgery had been immersed in the study of natural anatomy. But cancer so often disobeyed and distorted natural anatomical boundaries that unnatural boundaries had to be invented to constrain it... But despite these remarkable advances, some cancers—even seemingly locally restricted ones—still relapsed after surgery, prompting second and often third attempts to resect tumours. Surgeons returned to the operating table and cut and cut again, as if caught in a cat-and-mouse game, as cancer was slowly excavated out of the human body piece by piece. But what if the whole of cancer could be uprooted at its earliest stage using the most definitive surgery conceivable? What if cancer, incurable by means of conventional local surgery, could be cured by a radical, aggressive operation that would dig out its roots so completely, so exhaustively, that no possible trace was left behind? In an era captivated by the potency and creativity of surgeons, the idea of a surgeon's knife extracting cancer by its roots was imbued with promise and wonder. It would land on the already brittle and combustible world of oncology like a firecracker thrown into gunpowder.

We will move on to the next passage now; since the time of please look at the slide. Since the time of Vesalius, surgery had been immersed in the study of natural anatomy. But cancer so often disobeyed and distorted natural anatomical boundaries that unnatural boundaries had to be invented to constrain it. But despite these remarkable advances, some cancers-even seemingly locally restricted ones-still relapsed after surgery, prompting second and often third attempts to resect tumours.

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Questions 1-4. You have 10 minutes to read the passage and answer all the questions.

ANSWER WITHIN TWO-THREE LINES.

1. What is the idea that the author writes about through the paragraph?
2. What was the feature of that era and why did it ensure the success of a particular idea?
3. What was the point of aggressive surgery?
4. Identify a simile in the paragraph.

Let us look at the questions here; what is the idea now you are asked or you being asked the central idea that the author writes about through the paragraph. What was the feature of that era and why did it ensure the success of a particular idea, what was the point of aggressive surgery and identify a simile in the paragraph; you know simile like as pretty as a rose. So, you are using as to compare, as volatile or as explosive as a volcano ok.

So, answer to the first question what is the idea here? The author writes about the rise of radical aggressive surgery as a cure for cancer, and about the era captivated by the figure of the surgeon. So, the idea that cancer could be cured by radical surgery was a potent and successful one, and what was the point of aggressive surgery? Aggressive surgery was supposed to ensure that cancer never came back or never come back, and not it does not recur or does not relapsed. What is the simile here, like gunpowder or like a firecracker thrown into gunpowder? So, it is that radical, it would land on the already combustible world of oncology.

Now, let me give you a couple of words, develop your vocabulary first word combustible. Next definitive, next resect, and last potency p o t e n c y combustible definitive resect and potency always discuss it among friends always try to use it in a sentence of your own try to keep it at the back of your minds. So, that ones if it does appear or something like this scares at you in the face during the exams, then you have some you know you can you have a recall value these words have a recall value for you

so keep using them in your ordinary speech as well. Now what is combustible which is excitable easily a noide combustible personality, definitive is adjective which is conclusion or agreed conclusive and agreed, you know definitive decision the final word.

Resect is a verb which is a cutting out tissues or part of an organ for example, you talk about colon resect, colon. Potency is the noun which is the power of something to influence or make an a impression. So, this is an idea of enormous potency.

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PASSAGE 5

Specificity refers to the ability of any medicine to discriminate between its intended target and its host. Killing a cancer cell in a test tube is not a particularly difficult task: the chemical world is packed with malevolent poisons that, even in infinitesimal quantities, can dispatch a cancer cell within minutes. The trouble lies in finding a selective poison—a drug that will kill cancer without annihilating the patient. Systemic therapy without specificity is an indiscriminate bomb. For an anticancer poison to become a useful drug, Meyer knew, it needed to be a fantastically nimble knife: sharp enough to kill cancer yet selective enough to spare the patient.

Let us move on to look at the fifth passage; a specificity refers to the ability of any medicine to discriminate between it is intended target and it is host. Killing a cancer cell in a test tube is not a particularly difficult task: the chemical world is packed with malevolent poisons that, even in infinitesimal quantities, can dispatch a cancer cell within minutes. The trouble lies in finding a selective poison-a drug that will kill cancer without annihilating the patient. Systemic therapy without specificity is an indiscriminate bomb. For an anticancer poison to become a useful drug, Meyer knew, it needed to be a fantastically nimble knife: sharp enough to kill cancer yet selective enough to spare the patient.

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Question: Summarise the above paragraph in your own words. Answer in 5-6 lines. You have 5 minutes.

I would like you to summarise this paragraph in your own words, answer in 5 to 6 lines, do not take more than 3 to 4 minutes. Remember the tips on summarising start with the reference to the author like the author says or author, author puts forward or puts forth or argues that. So, it is good to start with the reference. Remember to try as much as possible to avoid the same words used exact words used in the paragraph and you are asked to make a some (Refer Time: 23:55) important point. Quality of a feature of a summary avoid using the exact words; use simple words rephrase the passage in your own words, remember the aim is into include the information, but to summarise the passage briefly and always be within a limit.

So, what could be a possible answer? The author writes that killing cancer cells is easy, the challenge for scientist lay in finding a drug that would kill only cancer cells, the difficulty lay in finding a drug that would selective kill only the malignant cells while sparing the normal healthy ones. So, ask yourself what are the key features and write the sentences in your own language using at least some of your own word, but do not radically change the meaning of the words.

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PASSAGE 6

The landscape of carcinogens is not static either. We are chemical apes: having discovered the capacity to extract, purify, and react molecules to produce new and wondrous molecules, we have begun to spin a new chemical universe around ourselves. Our bodies, our cells, our genes are thus being immersed and reimmersed in a changing flux of molecules--pesticides, pharmaceutical drugs, plastics, cosmetics, estrogens, food products, hormones, even novel forms of physical impulses, such as radiation and magnetism. Some of these, inevitably, will be carcinogenic. We cannot wish this world away; our task, then, is to sift through it vigilantly to discriminate bona fide carcinogens from innocent and useful bystanders.

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Question: Identify the aim of the above paragraph and write it in your own words. Answer in 2-4 lines. You have five minutes.

What is the aim of the above paragraph? You have to write in your own words as the before write into 2 to 3 lines, and you have 3 to 4 minutes here.

Remember the aim of the paragraph is different from the summary, aim is the primary idea that the author conveys in the passage. You need to identify the argument in the paragraph not just observe all the information given, and remember always read the first and last sentences again. The usually contain a clue these are the topic sentences they contain clues about the main argument in the passage, whenever you are asked to write the general summary of a passage remember to read the first and the last sentences very carefully.

So, to go back to our question the answer should be in the passage the author argues that the presence of carcinogenuses in inevitably, specially in modern life because we are surrounded by a (Refer Time: 27:06) variety of natural and manmade chemicals. Look at the slide this is my source the emperor of all maladies by Siddhartha Mukherjee.

Thank you very much practise and we will soon meet for our next class.