

You should spend about 20 minutes on **Questions 16–28**, which are based on **Passage 2** below.

## Science, Technology and the third Millennium: Change, Progress, Fear & Complacency

The 20th Century is drawing to a close, merging rapidly and imperceptibly with its successor – the first 100 years of the Third Millennium. It will deliver an awesome inheritance: a world propelled by science and technology; a world where incredible and accelerating discovery will create changes beyond the scope of our wildest speculations; a world where science and technology have placed *What Is Possible* beyond *What We Can Imagine*.

History may well dub the 1900s *The Century of Change* – the era when science and technology forged a permanent partnership and unleashed the first products of their unique alliance on a largely illiterate, earthbound civilisation. The Industrial Revolution provided the impetus for action and cast the die for the future; two world wars, fought only a generation apart and before 1950, accelerated the process. Life changed quickly and irreversibly – like a moth shedding its cocoon.

Within one life span, top-hatted physicians, gas lamps and horse-drawn transport gave way to transplant surgery, laser beams and space travel. The speed of change and the volume of knowledge defied measurement. Early attempts to do so reflected growing concerns about possible adverse effects on established social values and systems. One widely circulated document estimated that mankind's total knowledge doubled first between the years 1 AD and 1900; again by 1950; and again by 1960. After that, even the best would-be assessors gave up, many of them becoming management consultants. The new profession flourished as modern business faced rampant stress caused by inexorable change, and cut-throat competition in the global marketplace. *Change* and *Progress* became popular themes for training workshops.

Change is often presented as progress. To act on this misconception (as too frequently happens!) is to court disaster. Progress implies change with benefit. It reflects action taken only after management has considered relevant past experiences, current priorities and future objectives. Change for change's sake may reflect the response of a novice manager, or of one more senior who wishes to impress an advisory committee. Technology can convincingly disguise poor drafting styles or a proposal's lack of substance, but its healing influence does not extend to the application of a plan itself. Delays, increased costs, confusion and low staff morale often follow change without benefit. Sadly, solutions offered to such problems are inevitably, further change!

The age of push-button miracles has not eradicated boredom. In the 1960s, the world held its breath as live television and radio transmitted the first lunar landing. Many in the worldwide audience viewed and listened from the comfort of their homes. Technology had deftly demonstrated passive participation and predicted couch potatoes. Local cinemas and sports grounds would close. As the astronauts bounced across the ghostly moonscape and joked with each other and Earth, they demolished a primeval barrier: science fiction became fact. And *anything imaginable* became *possible* – perhaps worse, *inevitable*. For many participants, the mystery and magic of fantasy vanished forever – like a child's perception of Christmas. Technology had become commonplace, its wonders explicable and predictable.

The second moon expedition raised little public excitement. It was, after all, a repeat performance, sure of success. In the 1970s and 80s, repeated success itself bred complacency. But ...! Nearly 30 years later, a space shuttle exploded during the launch and the crew perished. Their deaths provoked intense, but short-term, shock. Commentators soon reflected a popular view: that such accidents, although unfortunate, were also inevitable. The astronauts had known and had accepted the risks; NASA could be proud of its record and rest on its laurels – until the next catastrophe.

Today, as we face a new Millennium, technology and science are simultaneously feared, admired and taken for granted. Enthusiasts and critics alike, increasingly depend on them. In education, for example, computer-based programmes are replacing textbooks, blackboards and tutors; the Internet bridges time and distance and provides access to specialist resources. Factors such as the need for skilled and costly support services are rarely discussed. The principles of learning are established: the way they may be best used in different settings and the results evaluated will vary with client needs. But, no matter how good, no one method can satisfy all the needs of any one client. Books, theatre and technology go well together.

The Third Millennium will open the door to a future filled with a kaleidoscope of scientific and technical wizardry. We have, without resistance, grown very dependent on such attractions. Few of us differentiate between simple and complex uses of technology. The former used routinely (e.g. simple mental arithmetic) may deskill us and increase our dependency – without our being aware of any danger. Artificial intelligence, human cloning and the unimaginable are no longer science fiction.

The time has come to reassess our relationship with science and technology to review the first 100 years and plan ahead. We must reaffirm our roles as creators and directors of that future and help realise its human potential. Without such effort, we may find ourselves victims of our inherent intelligence, curiosity and imagination – and a rather curious complacency.

### QUESTIONS 16–19

Using **NO MORE THAN THREE WORDS** from the text, answer the following questions:

16. According to the author, who or what became partners in the 1900s?
17. Something about the speed of change and the volume of knowledge was elusive. What was it?
18. What was the main contributory factor to the growth of the management consultancy profession, as world markets changed?
19. What does progress have that change does not?

### QUESTIONS 20–23

Choose the most appropriate letters **A–D** and write them in **Boxes 20–23** on your answer sheet.

20. Progress can be seen as action taken after consideration of ...  
**A** company priorities for the future.  
**B** the past, the present and the future.  
**C** mistakes made in the past.  
**D** experiences and objectives.
21. Some types of manager ...  
**A** are always changing things.  
**B** make changes for no apparent reason.  
**C** try to increase staff morale.  
**D** try to impress their colleagues.
22. When the first lunar landing happened, ...  
**A** many people were watching it at home.  
**B** fact became fiction.  
**C** a lot of people thought it was a joke.  
**D** science fiction became like Christmas.
23. The space shuttle explosion showed that ...  
**A** nothing is exciting anymore.  
**B** TV can show shocking things as well as exciting ones.  
**C** accidents are bound to happen.  
**D** the astronauts were to blame.

### QUESTIONS 24–28

The text mentions a number of current and future developments. State whether the developments in Questions **24–28** below are:

<b>C</b>	current, as mentioned in the text.
<b>F</b>	future, as mentioned in the text.
<b>NG</b>	not mentioned as current or future in the text.

24. machines taking the place of teachers.
25. a life filled with a variety of magical gadgetry.
26. recognition of the need for expensive, yet necessary support services.
27. an adaptation of learning principles to fit different situations.
28. a re-evaluation of our relationship with the world of science.