

Example Test: Academic Literacy 2019

Instructions

Do not open this test booklet until you are told to do so.

There is one correct answer for each question.

You must answer each question by putting a circle around the correct letter A, B, C or D on the ANSWER SHEET.

There are five parts and 30 questions.

You have 60 minutes to complete the test.

Please be aware that the February 14th test will be a computer based test.

Part 1

You are going to read an article about the measles vaccination. For **questions 1–6**, choose the answer (**A**, **B**, **C**, or **D**) which fits best according to the text.

How effective is measles vaccine?

The Centre for Disease Control (CDC) estimates that measles antibodies develop in approximately 95% of children vaccinated at 12 months and 98% vaccinated at 15 months or older. It is estimated that about 2–5% of children, who receive the vaccine at 12 months of age or younger or who only get one dose of Measles Mumps and Rubella vaccine (MMR), fail to be protected. A second dose of MMR is thought to stimulate a protective immune response in about 99% of vaccine recipients.

Following the introduction of the measles vaccine in 1963, public-health officials recommended only one dose of measles vaccine for all children. However, by 1989, following multiple outbreaks, including several occurring in fully vaccinated populations, the CDC's Advisory Committee on Immunization Practices (ACIP) updated its advice, and recommended that a second dose of measles vaccine, preferably the MMR vaccine, be administered to all children prior to school entry.

Currently the CDC states that vaccine-induced immunity 'appears to be long term and probably lifelong in most persons'. However, studies have shown that vaccine failure due to diminishing immunity can occur. In 2015, infectious disease experts reported that approximately one in ten measles-vaccinated individuals may be at risk of measles due to this effect. In 2011, news reports from India publicly stated that only one child in five vaccinated for measles was actually protected from contracting the disease, even after being fully vaccinated. Measles vaccine-acquired immunity is reported to wane in at least 5% of cases, within 10 to 15 years after vaccination, so outbreaks of measles can still occur in highly vaccinated populations.

The use of a third MMR vaccine dose to boost low measles vaccine-induced antibodies also doesn't appear to be effective. A recent study found that administering an additional dose of MMR vaccine in an attempt to boost antibodies in persons found to have low vaccine-induced measles antibodies was ineffective, leaving this particular population at risk for developing measles infection. In 2017, an

outbreak of measles occurred amongst young soldiers in the Middle East. The primary patient involved in the outbreak had documentation of having received three doses of measles vaccine and an additional eight cases of measles were found to have occurred in persons who reported having, or provided documentation of having, at least two doses of a measles-containing vaccine.

There is some evidence that if infants born to mothers who have experienced natural measles infection, are vaccinated at less than one year of age, they may not develop long-lasting vaccine-acquired antibodies because natural maternal antibodies interfere with vaccine-induced antibodies. Research on maternal antibodies has also found that infants born to mothers who were vaccinated against measles had lower levels of maternal antibodies and lost them sooner in comparison to infants born to mothers who had developed natural immunity from prior infection. As a result, babies born to **such mothers** may be at greater risk of developing measles due to the poor quality and short duration of maternal antibodies.

Although measles cases have declined globally since the 1980s as vaccination coverage has increased, there has been a resurgence of measles in Europe since 2017 with adults over 20 years comprising more than a third of all cases. This means that the median age of people contracting measles is increasing in countries such as Germany. This may be attributed to waning immunity, the impact of which is likely to become more apparent in future as the vaccinated population grows older and time passes since their vaccination. Indeed, one thought-provoking research finding suggests that, rather ironically, exposure to natural measles may be necessary for the maintenance of protective antibodies in vaccinated persons.

Indeed, a range of possible factors may go some way to explaining recent outbreaks of the disease in places where full vaccination is long established, and these warrant further investigation. A case in point relates to the number of vaccinated people who become infected with measles without exhibiting the typical range and severity of symptoms. Such individuals, who may well be fully vaccinated, are capable of transmitting the disease to others, but vaccinated individuals aren't routinely surveyed to determine whether they're experiencing asymptomatic or atypical measles. This would seem to be a good use of any available resources.

- 1 Advice regarding the measles vaccine was amended in 1989 in order to
- A take account of variations in the effectiveness of the vaccine itself.
 - B ensure that all initial vaccinations took place at a pre-determined age.
 - C accommodate developments in the way the vaccine was administered.
 - D address concerns about levels of immunity amongst vaccinated children.
- 2 Evidence from India supports the view that vaccine-acquired immunity
- A declines over time in a large proportion of fully vaccinated individuals.
 - B is likely to remain effective for as long as is generally claimed.
 - C cannot be assumed in all individuals who have been vaccinated.
 - D remains largely untested unless there is an outbreak of the disease.
- 3 The writer uses the example of soldiers in the Middle East to underline her point that administering further doses of vaccine may
- A not succeed in increasing immunity in all individuals.
 - B make some individuals more likely to contract the disease.
 - C be unwise in the absence of a complete vaccination history.
 - D not address the underlying reason for reduction in immunity.
- 4 The phrase **such mothers** refers to women who have
- A been infected with measles during or soon after pregnancy.
 - B vaccine-acquired rather than natural immunity to measles.
 - C natural immunity to measles as a result of a previous infection.
 - D a combination of vaccine-acquired and natural immunity to measles.

5 The writer is intrigued by the idea that a recent rise in cases of measles in Europe might be attributed to

- A the effectiveness of the vaccination programme itself.
- B the fact that declining immunity is becoming more evident.
- C the length of time since infected individuals were vaccinated.
- D the increase in exposure to measles amongst certain age groups.

6 In the final paragraph, the writer makes a case for more

- A systematic screening of the fully vaccinated population.
- B research into the symptoms of measles and how they vary.
- C attention to be paid to how measles spreads in different areas.
- D funding for studies looking at unexplained outbreaks of measles.

Part 2

You are going to read an article about the design of healthcare environments. For **questions 7–12**, choose the answer (**A**, **B**, **C**, or **D**) which fits best according to the text.

Using Virtual Reality in the design of mental-health facilities

Within healthcare environments, the emerging field of evidence-based design (EBD) explores the links between wellbeing and good design practice of the built environment. Healthcare environments providing mental-health services are regarded within clinical literature as having an effect on a patient's sense of wellbeing. Patients' experience of such spaces can have a highly emotional dimension, which implies that environment design should be investigated as a potential means to influence therapeutic efficacy. Further, individuals have differing abilities to block out their environments, and a stressed patient has reduced capacity to exclude environmental distractions, suggesting mental-health service

environments may have a greater impact for these individuals, who often arrive in an emotionally charged state.

By optimising both design processes and design outcomes, knowledge produced within the field of EBD seeks to improve healthcare staff performance, augment patient healing and enhance service outcomes and experiences. Architectural designs are now being created through digital, three-dimensional drawing techniques and virtual reality (VR) experiences, which open up the possibilities for architectural representations that propose new kinds of spaces for the healthcare sector. Although only a handful of existing studies have investigated this possibility, it seems likely that experiential input can impact decision-making about the design and use of space.

The research project detailed here is the final stage of a study investigating the needs of service users of mental-health services relative to the built environments delivering these services. The building in question is a community-based, mental-health facility providing therapy and counselling services for outpatients. The aim is to address the following investigative areas: the applicability of VR as a participatory design and research tool by testing its potential in an empirical study; understanding the supportive and unsupportive aspects of the built environment that might influence mental-health service user outcomes and experiences; and the efficacy of EBD in capturing mental-health service-user voices regarding the design of built therapeutic environments.

The study aims to recruit a minimum of fifteen adult volunteers who have been users of mental-health services in the past. They will participate in a VR walk-through, followed by a semi-structured interview. Each interviewee will be provided with the list of intended interview questions, and each VR walk-through and interview will last up to an hour. Being a relatively new area of research, these participant numbers are based on sample sizes used in comparable in-depth qualitative research. It is recognised, however, that this will preclude the identification of any trends regarding whether characteristics of age, gender or cultural background influenced the perception of these architectural spaces. The VR walk-through is an architectural model of a building produced through co-design with service users of mental-health services. This VR walk-through isn't intended to be therapeutic in itself or to form

part of any mental-health intervention or treatment. Rather, it represents a prototype building design. The VR walk-through model involves a building uninhabited in VR by any other individual (real or virtual).

Anticipated benefits are that the project will result in a toolkit set of guidance principles on access, design, community engagement, well-being measures and VR interventions, which could be used by mental-health services and stakeholders. But it doesn't take steps to calibrate or compare participant responses to the virtual environments with any corresponding physical environments. A validation process is also required in order that researchers can more explicitly comprehend the extent to which real and virtual spatial perceptions differ, and thus more accurately determine the robustness of **any such framework** before it informs real-world design practice.

The next phase for the study involves further testing of the VR environment with actual patient cohorts as they attend the mental-health service. This will enable an exploration of how service users who are actually facing the emotions associated with a care appointment, such as frustration, boredom and anxiety in the waiting room, respond to the virtual environments. Eventually, this data could be further augmented with the incorporation of physiological measures, such as heart rate, blood pressure and cortisol measurements, alongside eye-tracking to pinpoint which elements within the environment are observed and hold attention. For a more holistic understanding of how healthcare settings affect service-user outcomes and experiences, the inclusion of VR testing within a mixed-methods research programme is advocated; inclusion of interviews, focus groups, observations, and participatory co-design workshops would provide a more comprehensive understanding of participant responses.

- 7 What is suggested about mental-health patients in the first paragraph?
- A Their views are broadly representative of patients in general.
 - B They are often too distressed to notice their built surroundings.
 - C Their feedback about the design of facilities isn't always reliable.
 - D They are particularly likely to benefit from well-designed buildings.

- 8 What does the writer suggest about the use of VR to inform the design of healthcare facilities?
- A Its potential has yet to be fully explored.
 - B It is already producing improved outcomes
 - C It has failed to attract the attention of architects.
 - D It is likely to make current EBD methods redundant.
- 9 The current research project sets out to establish the extent to which EBD can
- A reliably report the perspective of the service user.
 - B reveal shortcomings in current design practices.
 - C inform the design of a particular type of building.
 - D function with a random selection of service users.
- 10 What does the writer say about the sample size used?
- A It reflects the length and intensity of the user experience.
 - B It is in line with accepted practice for this type of study.
 - C It has been determined by the need to recruit volunteers.
 - D It may be inadequate to fulfil all the study's stated aims.
- 11 The phrase **any such framework** in the fifth paragraph refers to
- A certain measurement characteristics.
 - B a form of comparative analysis.
 - C a set of guiding principles.
 - D a process of validation.

- 12 The next stage of the research project will seek to use VR
- A in conjunction with physiological evidence.
 - B in a much wider range of healthcare settings.
 - C in assessing both emotional and rational reactions.
 - D in a situation familiar to typical users of the service.

Part 3

You are going to read an article about the evolution of technology. For **questions 13–18**, choose the answer (**A**, **B**, **C**, or **D**) which fits best according to the text.

The Progress Illusion

We tend to think of technological evolution as an exponential curve that starts out more or less flat in the early Stone Age and accelerates towards the present. But the idea that we're becoming ever more inventive may be an illusion. Looked at under the magnifying glass, the apparently smooth curve breaks up into a frenetic series of advances, retreats and new advances - what the biologist Peter Richerson describes as evolution 'noodling about'.

In fact, over the whole of human history, we've probably lost more innovations than we now possess, says anthropologist Luke Prema. It's a sobering thought. Just when we were pinning our hopes on producing high-tech fixes for today's problems – climate change, emerging infectious diseases and so on – comes the news that we're not advancing inexorably towards technological Nirvana after all. Nevertheless, a better understanding of how technologies evolve could hold some valuable lessons for the future. In building a more fine-grained picture of human technological history, we may identify clues as to what will work and what won't.

One long-standing mystery of technological evolution is why our Stone Age ancestors apparently showed so little inventiveness in their toolmaking. It took two million years for the earliest stone tools to develop into really effective hand axes. This flat part of the technological evolution curve has been put down to the limited cognitive abilities of early hominins. Unable to learn from previous generations, each

individual started again from scratch because of a lack of what's termed 'cumulative culture'. This rests on two key skills: social learning – the transmission of knowledge to new members of a group, and over-imitation – the high-fidelity copying of a behaviour, including irrelevant or incidental elements, which allows the behaviour and its context to be passed along together. Some researchers have argued that cumulative culture only made its appearance around a hundred-thousand years ago. But anthropologist and stone-tool expert Dietrich Stout has challenged that view.

Innovation tends to happen by the introduction, deliberate or otherwise, of copying errors – the equivalent of genetic mutations in biological evolution – with those providing an adaptive advantage more likely to be passed on. Early humans might well have had what it takes cognitively to learn from their forebears, Stout argues, it's just that with the simple tools at their disposal, there wasn't much room for copying error. Put simply, he says, 'you can't change much about a hand axe if you still want it to perform all the functions that a hand axe performs'. However, as tool complexity increased, the potential for innovation grew.

Premo suggests another reason why Stone Age creativity may have been underestimated. Throughout those apparently uneventful two-million years, our ancestors were hunter-gatherers who lived in extended, itinerant family groups of between twenty and forty adults, plus children. 'These could have been exposed to fairly high chances of the whole group going extinct,' he says, whether because their best hunter was incapacitated due to illness or injury, or because environmental conditions changed rapidly. When a local population died out, all its innovations went with it – and that could mean the loss of generations' worth of know-how.

But if Stone Age toolmakers were innovating, where is the evidence? The archaeological record is notoriously patchy and gets sparser the further back you go. But this alone can't account for the perception that there was a lack of progress. Charles Perreault gathered information about five-hundred archaeological artefacts - tools, pots, etc. dating from the past ten-thousand years – and analysed how they changed over time. He found that the rate of change appeared rapid over short time periods and slower over longer ones. A key reason for this is that there are many advances and retreats that tend to cancel each other out in the longer view.

So, what of the future? Technological progress, as measured by indicators such as the rate of scientific publication and patents filed, has been accelerating exponentially over the past few centuries, but now shows signs of slowing. It seems we've accumulated so much knowledge, that we spend a disproportionate amount of time learning from previous generations at the expense of innovation. For example, physics undergraduates are largely tested on their grasp of pre-1900 discoveries, only post-graduate work goes beyond that. This lag is having an impact.

- 13 In using the term '**noodling about**', Richerson is suggesting that technological innovation
- A tends not to emerge in a clearly recognisable pattern.
 - B isn't generally as ground-breaking as it initially seems.
 - C often fails because its true potential isn't appreciated.
 - D may only become apparent with the benefit of hindsight.
- 14 In the second paragraph, the writer is suggesting that Premo's analysis of the history of innovation
- A may be oversimplifying a complicated process.
 - B shouldn't be applied to contemporary issues.
 - C could turn out to provide worthwhile insights.
 - D might undermine public confidence in science.

- 15 What assumption regarding '**cumulative culture**' does Stout challenge?
- A the range of skills that provide evidence of it.
 - B how long it took our ancestors to develop it.
 - C why it may only have emerged relatively late.
 - D whether known artefacts can prove its existence.
- 16 Premo suggests that Stone Age creativity may be underestimated because of
- A the internal structure of typical social groupings.
 - B the inherently small-scale nature of the social unit.
 - C the lack of interaction between rival social groups.
 - D the average lifespan of individuals in the social unit.
- 17 Perreault's research into archaeological artefacts established that ideas about the pace of innovation could be influenced by
- A the timescale chosen for any study being undertaken.
 - B the varying availability of objects from different periods.
 - C the extent to which objects studied are representative.
 - D the range of technologies focussed on in any one study.

- 18 In the final paragraph, the writer is suggesting that future technological progress
- A may need assessing according to different criteria.
 - B may be even harder to quantify than in the past.
 - C may be entering a naturally over-productive cycle.
 - D may be influenced by factors that inhibit innovation.

Part 4

You are going to read an article about imagination. For **questions 19–24**, choose the answer (**A**, **B**, **C**, or **D**) which fits best according to the text.

The Power of Daydreaming

The imaginary planets created by a six-year-old boy and documented by psychologist **Marjorie Taylor**, seem very elaborate to the adult observer. These were at war for control of the solar system, and the boy had imagined buildings, sculptures, even a currency, to flesh out his imaginings. But this complexity is far from exceptional. Psychologists who research pretend play say 12% of US college students remember having paracosms, as these detailed alternative worlds are called, while 60% of under-sevens have, or remember having, imaginary companions. And such phenomena aren't the preserve of childhood: although adults are likelier to indulge their imaginations with novels, movies and video games, some do continue to interact with **them**. Neuroscientists once regarded our propensity to conjure up and then flesh out fictional scenarios, people and objects as mere mental fluff. Now this is recognised as playing a central role in human thought, from planning and creativity to memory and problem solving. It protects our mental health and may even be the fragile foundation on which human society rests. If imagination is the ability to transcend our current circumstances and use our minds to travel through time and space and beyond, then we're using it constantly, says Taylor.

When writer **Catherine Brahic** discovered that nobody knows how much time people typically spend immersed in figments of imagination, she set out to keep track of her own imaginings over the course of a month. She gave up after a few hours, overwhelmed by the scale of the task, concluding that imagination was an almost continuous feature of inner life that encompasses everything from planning meals, to prioritising today's workload, to structuring the next sentence. Similarly, every day we play out various scenarios in our minds to enable us to select the best one. This kind of mental flight of fancy is an important part of how we make decisions, allowing us to explore our emotional reactions to various outcomes without actually having to experience them. Imagination also plays a role in designing and innovation. Brahic points out that every human-made object in your line of vision was imagined before it became real - that daydreaming and fantasy are inextricably linked to hypothetical thinking.

To rule out any confusion with memory, **Alison Gopnik** - psychologist and philosopher – says that imagination is our ability to consider possibilities that we know aren't true in the here and now – a definition that includes mythical beasts and future events but excludes memories and visualisations of things that really happened. Even this narrow definition encompasses a large proportion of human thought. Gopnik is particularly interested in counterfactual thinking, a kind of imagination that treads a fine line between the real and the unreal. Like when you're interviewed for a new job and afterwards you mull over everything that happened and how it might have played out differently if you'd given different answers. In other words, you think about a reality that didn't happen – but only just. This is how we gain insights from our mistakes and adjust our behaviour accordingly, which is seen as one of the prime functions of imagination. Gopnik also accepts that it's almost impossible to say how much time the average adult spends immersed in mental time-travel, daydreaming, planning, counterfactual thinking, creativity and fantasy. 'But one thing pretty much everyone agrees on,' she says, 'is that however much we as adults imagine, we don't do it nearly as much as children.'

Whether children's imaginary worlds predict something about their future is an open question. One study led by **Michele Root-Bernstein** found that adults who received awards for creativity were more likely to have had paracosms as children. But there

simply haven't been any long-term studies following individuals over decades to show whether children who engage in more pretend play make more creative adults. Some studies also suggest that children with imaginary friends have stronger theory of mind – meaning they are better able to understand and relate to the mental states of other people. **Steven Mithen**, an archaeologist and anthropologist suggests that the evolution of theory of mind in our early ancestors was the first step in acquiring our unique skills of imagination.

- 19 What does the word 'them' in the first paragraph refer to
- A paracosms still developing into adulthood
 - B imaginary worlds invented in childhood
 - C commercially produced fictional scenarios
 - D invented societies described to psychologists
- 20 What is suggested about neuroscientists in the first paragraph?
- A They have revised their views on the role of the imagination.
 - B They see the imagination in a very different way to psychologists.
 - C They question how reliable research into the imagination can be.
 - D They accept the need for inter-disciplinary study of the imagination.
- 21 Who agrees with Brahic's view that it's impossible to quantify how long an individual spends 'immersed in figments of imagination'?
- A Marjorie Taylor
 - B Alison Gopnik
 - C Michele Root-Bernstein
 - D Steven Mithen

- 22 In the third paragraph, it is suggested that the idea of 'counterfactual thinking' underlines the role of the imagination in
- A separating realistic goals from dreams and fantasies.
 - B visualising the outcome of important events in advance.
 - C mentally preparing oneself for challenging situations.
 - D promoting the effectiveness of learning by experience.
- 23 What is suggested about adult creativity by Root-Bernstein's research?
- A There may be a tentative link with the nature of childhood play.
 - B There is doubt as to whether it can be successfully measured.
 - C There may already be evidence of exceptional levels in childhood.
 - D There may be a link with empathetic attitudes towards others.
- 24 According to the article, who is keenest to set limits on the definition of what 'the imagination' means?
- A Marjorie Taylor
 - B Catherine Brahic
 - C Alison Gopnik
 - D Michele Root-Bernstein

Part 5

You are going to read an article about genomics. For **questions 25–30**, choose the answer (**A, B, C, or D**) which fits best according to the text.

A review of *The Postgenomic Condition* by Jenny Reardon

In the two decades since the Human Genome Project was declared complete, untold billions have been poured into projects promising to map and interpret our genetic code. Hopes and fears for the expected revolution have affected all walks of life from science fiction to the health service. Jenny Reardon's book *The Postgenomic Condition* draws on decades of fieldwork to tell stories that lay bare the intricate tangle of technologies, individuals, institutions, expectations, experiments, businesses, communities, acts of resistance and superhuman efforts of grinding hard work that make up our genomic age. It is an example of the best kind of sociological writing, where specific, detailed, well-told stories are built into a powerful set of arguments with implications not only for the field in question, but for wider society too. This is a book not just about what went wrong in genomics, and how hopes for a better world go awry, it is also about what happens when our society encounters new technologies that refuse to stand still long enough to be understood.

One phenomenon that she investigates is the craze for off-the-shelf DNA-testing kits. These tests draw on the persistent, enticing idea of genetics as a 'book of life' – a magical tome that, decrypted, would spill secrets of our past and future: our pedigree, our susceptibilities to illness, our innate capabilities and the traits and possibilities we might pass on to our children. But recent years have seen a growing sense that this metaphor has failed. In 2010, Craig Venter, the photo-finish loser of the race to sequence the human genome in 2000, said: 'We've learned nothing from the genome. And since then, though sequencing technologies have become faster and cheaper, and our biobanks and databases continue to grow, few clear single-gene causes for single, clear health problems have been identified. We're mired in disappointment' In Reardon's words, 'struggling to reap the promised harvest of meaningful knowledge that might foster life and human understanding'.

We have a few genetic tests for rare diseases such as Huntington's – but tests don't mean treatments. They have value, but they aren't the world-changing revolutions

we thought we were trading our blood and tissues for. Billions and billions of dollars have been spent in a world short of doctors and nurses, where antimicrobial resistance is on the rise, where simple things that we know work to radically improve population health – education, empowerment, better food and housing – are inaccessible to so many. Was chasing the slim hope of staggeringly expensive, targeted treatments for the elite really the best use of our resources? Reardon, to her credit, faces these questions head on.

There is no simple enemy here, and no single mistake. In her account of the Human Genome Project, Reardon refuses to succumb to the familiar myth in which valiant academics worked through the night to vanquish greedy corporate interests and save the genome for the human race. She paints instead a nuanced picture of the actions and motivations of the institutions and individuals involved. This refusal to settle for simple answers is maintained throughout the book. The theoretical argument is strung through a chain of stories – about national biobanks and start-ups, research projects and acts of community resistance, experiments, ad campaigns and corporate takeovers – which centres on Hannah Arendt's assertion that progress relies on society's ability to identify things of value, and to gather around those things to decide what to do with them. In genomics, and by implication, in the wider world of frantic technological innovation, Reardon argues that every part of **this construction** comes under threat.

The current pace of technological change and rapidly developing scientific understanding means that 'things' are developed and discarded so fast that we're unable to identify them and then debate or regulate them. 'Thinking', too, is degraded by being offloaded to machines that can compute, but never understand. Reardon draws on philosopher Jean-François Lyotard's claim that automation reduces thought to data handling so that 'knowledge is unhinged from its claim to truth and to justice'. We have all this data, but in the words of the linguist Geoffrey Nunberg, 'there's no road back from bits to meaning'.

- 25 From the first paragraph, we learn that Reardon's book provides
- A an overview of research carried out by a range of people.
 - B a collection of examples illustrating an existing theory.
 - C in-depth case studies that highlight contrasting ideas.
 - D a well-supported analysis of the effects of a discovery.
- 26 The writer quotes from Craig Ventnor to underline his point that
- A the early promise of the human genome project hasn't been realised.
 - B a popular manifestation of public interest in DNA has been discredited.
 - C a misunderstanding about how DNA is accessed has been revealed.
 - D the achievements of the human genome project should be celebrated.
- 27 In the third paragraph, the writer applauds Reardon for questioning
- A the assumed medical potential of DNA.
 - B the focus on investment linked to DNA.
 - C the cost of treatments associated with DNA.
 - D the attitude of health professionals to DNA.

- 28 The writer suggests that Reardon's account of the human genome project
- A manages to be both insightful and fair.
 - B fails to address some of the central issues.
 - C successfully captures the drama of the moment.
 - D avoids a focus on prominent personalities.
- 29 The phrase **this construction** refers to a theory that seeks to explain
- A how individual projects combine to move society forward.
 - B how technological change can fuel the rate of progress.
 - C how innovation can be managed for the common good.
 - D how genomics and economics are intrinsically linked.
- 30 The writer quotes from both Lyotard and Nunberg to support the view that
- A all data is valuable if handled correctly.
 - B data alone can't provide us with answers.
 - C data processing facilitates scientific breakthroughs.
 - D the collection of data needs to be closely regulated.

That is the end of the test.