Part 5

You are going to read a magazine article about whether or not animals have emotions. For questions **31–36**, choose the answer (**A**, **B**, **C** or **D**) which you think fits best according to the text. Mark your answers **on the separate answer sheet**.

Animal Emotions

Tom Whipple asks 'Do animals really have emotions? And what are the consequences if they do?'

In a Swedish zoo a chimpanzee called Santino spent his nights breaking up concrete into pieces to throw at visitors during the day. Was he being spiteful? In caves in the US, female bats help unrelated fruit bat mothers if they can't find the right birthing position. Are they being caring? Fifty years ago, these questions would have been largely seen as irrelevant. Animals had behaviours, the behaviours produced measurable outcomes, and science recorded those outcomes. The idea that animals have consciousness, feelings and moral systems was sloppy and sentimental.

But recently that has partially changed. Thanks to research into the behaviour of bats, chimps, not to mention rats, dolphins and chickens, emotions of animals have gone from being a taboo area of investigation to being tentatively explored. It is a change that has in recent years filtered through the scientific strata to a selection of popular science books, such as Mark Bekoff's *Wild Justice* and Victoria Braithwaite's *Do Fish Feel Pain?* And in the process it has started a debate that may never be solved by science: can animals be said to have consciousness?

This debate stimulates a second, much less abstract, one: not of consciousness, but conscience – a person's moral sense of right and wrong that guides their behaviour. In a recent experiment involving cows that had to open a locked gate in order to get food, it became apparent that those that successfully opened the gate themselves showed more pleasure – by jumping and kicking their legs – than those that had to have the gate opened for them. If, as this research seems to imply, cows enjoy problem-solving, what does it mean for the production and consumption of beef?

The observations may not be disputed, but the interpretation of them is. According to Dr Jonathan Balcombe, author of *Second Nature*, the only logically consistent response to the new research is to stop eating meat. For him, humanity is on the verge of the greatest revolution in ethics since the abolition of slavery. According to Aubrey Manning, Professor Emeritus at Edinburgh University, we should at the very least re-evaluate our view of animal cognition. For him, 'the only tenable hypothesis is that animals do have a theory of mind, but it's simpler than ours.' And according to Professor Euan MacPhail we should just stop anthropomorphising. The three may never be reconciled because the crux of the issue is not so much a scientific disagreement, or even a moral one, but a philosophical one. Given that even defining consciousness is near impossible, can we ever hope to know, in the words of the philosopher Thomas Nagel, what it is like to be a bat? Let alone a bat midwife.

Balcombe describes a landmark experiment he did that – in his interpretation – appears to show that starlings – a type of bird – can get depressed. In a study at Newcastle University, starlings were split into two groups. Half were housed in luxurious cages, with plenty of space and water. The other half were housed in small, barren cages. Initially both groups were fed with tasty worms from one box and unpleasant worms from another, and soon learned to take only from the tasty box. But subsequently when the birds were offered only unpleasant worms, only the ones housed in luxurious cages would eat. It seemed, or at least Balcombe concluded, that being in a nasty cage caused the starlings to be pessimistic about life in general.

Balcombe, who has worked with animal rights groups, has a clear bias. 'We look back with abhorrence on an era where there was racism,' he says. 'Our view about animals will someday be the same. We can't espouse animal rights between bites of a cheeseburger.' If he were the only advocate of this view of animal consciousness, it might be easy to dismiss him as an extremist. Unfortunately for those who might prefer to ignore Balcombe, Professor Aubrey Manning is in the same camp. Manning has written a textbook, *An Introduction to Animal Behaviour*. 'What we are seeing is a pendulum swing,' he says. 'At the turn of the 20th century there were people who made assumptions that animals thought just like us, and there was a reaction against that. Now we are going the other way. But it is a highly contentious subject and you really want to try to avoid the sound of academics with various personal grievances and strong personal opinions.'

31 In the first paragraph the writer suggests that

- **A** some older animal research would now be seen as unscientific.
- **B** some animals respond too unpredictably to be included in reliable study data.
- **C** some animal research has come to conclusions that are highly questionable.
- **D** some animal behaviour is difficult to explain through a traditional approach.

32 In the second paragraph, what point is the writer making about the idea that animals have emotions?

- **A** It has been confused by many with another issue.
- **B** It has moved beyond mere academic speculation.
- **C** It has been fully accepted by the scientific community.
- **D** It has contradicted another recent proposal on the topic.

33 When the writer mentions cows, he is saying that

- **A** scientists now believe that certain animals have a sense of morality.
- **B** some animals are fundamentally unsuited to being kept in captivity.
- **C** the question of how animals should be treated needs to be re-examined.
- **D** the number of animals demonstrating intelligence is higher than previously thought.

34 In the fourth paragraph, what conclusion does the writer draw about the differing views of experts?

- **A** Some of them verge on the ridiculous.
- **B** They are based on flawed evidence.
- **C** They do not warrant further investigation.
- **D** A consensus is unlikely ever to be reached.

35 In the fifth paragraph, it is clear that the writer

- **A** wishes to be seen as objectively reporting Balcombe's experiment.
- **B** intends to defend Balcombe against a possible criticism.
- **C** is questioning the details of Balcombe's methods.
- **D** agrees in principle with Balcombe's ideas.

36 What is said in the final paragraph about Balcombe's views?

- **A** They have been directly influenced by research from a previous era.
- **B** They are shared by an eminent authority on the subject.
- **C** They have been rejected as extreme by one opponent.
- **D** They are seen as objectionable in some quarters.

Part 6

You are going to read four extracts from articles in which sports experts discuss hosting the Olympic Games. For questions **37–40**, choose from the experts **A–D**. The experts may be chosen more than once.
Mark your answers **on the separate answer sheet.**

Is hosting the Olympic Games worthwhile?

Four sports experts look at the pros and cons of hosting the summer Olympic Games

A It's clear that, both just before and immediately after the Olympics, the number of people routinely doing physical activity rises in the host country. But the main reason cities bid to hold the Olympics is that, perhaps against the odds, it's wildly popular with the voters who foot the bill. I say 'against the odds' because there is strikingly little evidence to suggest that such events draw new investment. Spending lavishly on a short-lived event is, financially speaking, a dubious long-term strategy. Additionally, when a city hosts the Olympics, those who may have been considering visiting it turn to other destinations in order to avoid the crowds. I don't think the issue would be solved by spreading the Games over more than one city, as this wouldn't be popular. In Sydney, for example, as many sports as possible were crammed into a dedicated Olympic Park, and the concept was very well received.

B It's rarely the case that all Olympic events are held in a single city. Early-round soccer games, for example, take place in many different towns. Still, hosting the Olympics poses a high risk to the leaders of the city involved. While in some places initial negativity turns to more positive emotions once the Games begin, in others strong local support during the bidding process can sour as the level of spending necessary becomes clear. Such a change seems rather unjust to me as cities which host the Olympics clearly experience a significant increase in trade. The positive impact on numbers of travellers including the host city in their itinerary is also generally quite significant. On the other hand, my research shows no direct link between the profile and popularity of a sport at the elite level during the Olympics and its subsequent uptake at the grassroots level in host cities.

C I think it's significant that, in the most recent round of bidding to host the Olympics, several world-famous cities withdrew after failing to summon sufficient support among their own citizens. Their objections were almost exclusively based around the huge budgets involved. Supporters like to point to the commerce that the Olympics has supposedly brought to certain cities. But that commerce was going to spring up anyway. It was not directly connected to the Olympics. The Olympics have become too big and expensive to have in one place. In this age of instant communication, there's simply no need to condense the Games in one overburdened location. Better distribution would also spread the associated rise in demand for hotels and restaurants that is one noticeable benefit of hosting the Games. Another is the increase in the number of people who, for example, join teams or start running regularly following the Olympics. We see this in almost all host cities.

D Every time we've analysed it, the conclusion has been the same: there is no real monetary benefit in hosting the Olympic Games. Temporary surges in consumer spending associated with a spike in arrivals from overseas may help to offset the expense of hosting, but it's clear that hosting the Olympics has become a burden. The solution, however, is simple – choose a range of cities to host, not just one. Politicians bid for the Olympics hoping it will increase their popularity. However, even if the bid is successful, the politicians involved are seldom still around once the event starts seven years later. And as for the claim that hosting the Games leads to fitter citizens, well we only have to look at London. Since the Olympics there, the number of people taking exercise for a minimum of thirty minutes at least once a week has actually declined.

Which expert

expresses a different view from the other three regarding the effect that hosting the Olympics has on the economy of the host city? **37** ☐

has a different opinion from B on whether hosting the Olympics increases tourism in the host city? **38** ☐

shares an opinion with B about whether hosting the Olympics increases participation in sport among residents of the host city? **39** ☐

shares an opinion with C regarding the idea that several cities should get together to host the Olympic Games? **40** ☐

Part 7

You are going to read a newspaper article about editing the sound in movies. Six paragraphs have been removed from the article. Choose from the paragraphs **A–G** the one which fits each gap (**41–46**). There is one extra paragraph which you do not need to use.
Mark your answers **on the separate answer sheet**.

The art of sound in movies

The monstrous complexity of sound editing work – the quest to make films sound the way the world sounds – may not be immediately apparent. After a movie has been filmed, it enters the labyrinthine world of post-production, in which the best takes are selected and spliced together into roughly 20-minute segments of film. These are worked on and then stitched together at the end of post-production.

41 _____

The distinction between these processes is subtle: the first two have more to do with the creation and selection of the sounds that make up each scene, and the development of a cohesive aural aesthetic for a movie. The third involves taking sounds created by the designers and editors and integrating them in each scene so that everything comes across as 'natural'.

42 _____

First, editors remove the audio recordings taken during filming and break down each scene into distinct sonic elements, namely dialogue, effects, music and Foley. 'Foley' is the term used for everyday sounds such as squeaky shoes or cutlery jangling in a drawer.

43 _____

Consider a classic movie scene in which something important has just happened, for example a villain has just pulled up in his car. There are a few moments of what might be mistaken for stillness. Nothing moves – but the soundscape is deceptively layered There might be a mostly unnoticeable rustle of leaves in the trees periodically, so faint that almost no one would register it consciously. Or the sound of a vehicle rolling through an intersection a block or two over; off camera, a dog barks somewhere far away.

44 _____

All this requires a very particular and somewhat strange set of talents and fascinations. You need the ability not only to hear with an almost superhuman ear, but also the technical proficiency and saint-like patience to spend hours getting the sound of a kettle's hiss exactly the right length as well as the right pitch – and not only the right pitch but the right pitch considering that the camera moves across the scene during the shot.

45 _____

This is why there is something very slightly unnerving about spending time around people whose powers of perception suggest the existence of an entirely different layer of reality that you are missing. The way they work requires an entirely different – and, in some senses, unnatural – way of experiencing sound. The process reflects the fact that each sound is important enough to deserve its own consideration, so each gets edited separately before being put all together and checked for coherence.

46 _____

Consequently, the vast majority of people walk around not hearing most of what there is to hear. Not so, for most sound editors. It can be mildly excruciating to listen this hard, to hear so much, which is why some of the team wear earplugs when they walk around the city.

A Each of these components needs to be built and then edited separately for every scene before being assigned its own dedicated editor. Then, the top guys take the team's work and layer it to make scenes that sound like the real world sounds.

B The gesture had the studious flourish which a minor orchestral instrumentalist – say, the triangle player – might devote to his one entrance. But instead of being the work of the actor, likely as not, that was a moustachioed man standing in his socks in a warehouse somewhere.

C This is radically unlike the way the human brain is designed to hear. We are predisposed to heed the rhythms and pitch of people talking and noises that might indicate threat. Other sounds – like 'white noise' – are depressed so that the brain fires fewer responses and we automatically 'tune out'. This is how the brain converts sound into information.

D The viewer's ear will subconsciously anticipate hearing a maddeningly subtle, but critical, Doppler effect, which means that the tone it makes as it boils needs to shift downward at precisely the interval that a real one would if you happened to walk by at that speed.

E Each part goes through picture editing (for such things as visual continuity or colour) before being handed over to the sound supervisor, who oversees all the various elements of sound design, sound editing, and mixing.

F When the thud of his boot heel finally connects with the asphalt, his breathing is laboured, even the pads of his fingers creak as they make contact with the collar of his leather jacket as he straightens. None of these are there because some microphone picked them up. They're there because someone chose them and put them there, like every other sound in the film.

G In other words, it is important to make sure the sound of a butterfly landing on the hood of a car isn't louder than a car backfiring. Only a few people have an ear for these types of work.

Part 8

You are going to read an article in which a scientist discusses the mistaken ideas people have about his profession. For questions **47–56**, choose from the sections (**A–D**). The sections may be chosen more than once.
Mark your answers **on the separate answer sheet.**

In which section does the writer

speculate about the experiences of other professionals? 47

suggest motives for the actions of particular scientists? 48

explain why an individual cannot be familiar with all branches of science? 49

suggest that being famous can cause people to behave in a particular way? 50

admit that a common portrayal of scientists achieves its purpose? 51

use an example from another profession to support an observation about human nature? 52

admit to a personal bias? 53

mention the role of the team in the advancement of scientific knowledge? 54

admit to a minor wrongdoing? 55

mention that misunderstandings about science are rooted in curriculum design? 56

Why people think scientists know everything

Neuroscientist Dean Burnett considers the reasons why people often have the wrong idea about science and scientists.

A One unexpected aspect of being a scientist is the weird questions you get asked by non-scientists. Whilst publicising my latest book, I've been asked many. Among my favourites is: 'Which are smarter, tigers or wolves?' As a neuroscientist, I'm not trained to answer this (assuming an answer even exists). Obviously, if I'm going to put myself out there as an authority on things, then I should expect questions. However, this happened to me even before I became a public figure, and other scientists I've spoken to report similar, regular occurrences. It's just something people do, like meeting a doctor at a party and asking them about a rash. If you're a scientist, people assume you know all science, something which would require several lifetimes of study. In truth, most scientists are, just like experts in any other field, very specialist. If you meet a historian who specialises in 19th-century Britain, asking them about ancient Egyptians is illogical. Maybe this does happen to historians. I can't say. It happens to scientists though. So where does this 'scientists know all science' preconception come from?

B Because my area of interest is the human brain, I tend to blame it for many of life's problems. For example, the way in which it handles information could lead to this idea of the all-knowing scientist. Our brain has to deal with a lot of information, so it often uses short cuts. One of these is to clump information together. While functionally useful, you can see how this would lead to inaccuracies or even prejudices. If someone struggles to understand science, in their heads it all gets lumped together as 'stuff I don't understand'. The same goes for scientists, who may get labelled as 'people who understand things I don't'. Education also plays a role. The study of science gets more specific the further you progress, but at a young age you get taught what's called simply 'science'. So you begin with this notion that science is just one subject, and have to gradually figure out otherwise. Would it be surprising then, if many people never really move on from this perception due to a disinterest in science, and consequently continue to regard scientists as interchangeable?

C The way in which scientists are portrayed in the media doesn't help either. Any new discovery or development reported in the press invariably begins with 'Scientists have discovered...' or 'According to scientists...'. You seldom get this in any other field. The latest government initiative does not begin with 'Politicians have decided...'. If any study or finding worth mentioning is invariably attributed to all scientists everywhere, it's understandable if the average reader ends up thinking they're all one and the same. The press also love the idea of the 'lone genius'. The story of a scientific discovery typically focuses on a single, brilliant intellectual, changing the world via his or her all-encompassing genius. While this makes for an inspiring narrative and therefore sells newspapers, it's far from the collaborative effort which most science is the result of. In fiction too, we constantly encounter the stand-alone genius who knows everything about everything, usually in very helpful and plot-relevant ways. This is bound to rub off on some people in the real world.

D Of course, this whole thing would be easier if it weren't for actual scientists making matters worse. Some, maybe unintentionally, make declarations about other fields which don't agree with what the evidence says. I've even done it myself occasionally. In popular science books, it's not uncommon for the author to stray into areas that they aren't that familiar with but which need to be addressed in order to provide a coherent argument. Sadly, you also get the scientists who, having achieved influence and prestige, start to believe their own press and end up making declarations about fields beyond their own, using confidence instead of actual awareness of how things work. Because such people have a public platform, the public assumes they must be right. The fact is that if scientists really did know everything, they'd know how to put an end to the misconceptions about their professions. But they don't. So they don't.