**1**

**According to Vul et al. (2009) attempts to correlate brain activity with questionnaire measures in social neuroscience have been susceptible to which problem?**

(A) High proportion of type II errors

(B) High proportion of type I errors

(C) Low reliability

(D) Low external validity

**Answer:**
(B) High proportion of type I errors

**2**

**What neuroanatomical region is described by the following? 'Sub-cortical grey matter structures lying in the centre of the brain containing the thalamus and hypothalamus'**

(A) Diencephalon

(B) Basal ganglia

(C) Limbic system

(D) Midbrain

**Answer:**
(A) Diencephalon

**3**

**What type of brain tissue consists primarily of neuronal cell bodies?**

(A) White matter

(B) Glia

(C) Spinal cord

(D) Grey matter

**Answer:**
(D) Grey matter

**4**

**What type of method is particularly linked to the work of Wilder Penfield?**

(A) EEG

(B) Electrical stimulation of the brain

(C) Functional MRI

(D) Transcranial magnetic stimulation

**Answer:**
(B) Electrical stimulation of the brain

)

**5** **What, exactly, does it mean to say that a brain region is 'active' in a functional imaging experiment?**

(A) The region is critical for performing some aspect of that experiment.

(B) The neurons in that region have an excitatory response during the experiment.

(C) The region has a rapid response to some aspect of that experiment.

(D) The haemodynamic response in that region is greater than in some other condition(s).

**Answer:**
(D) The haemodynamic response in that region is greater than in some other condition(s).

**6** **Which event-related potential component has been associated with processing faces relative to other visual stimuli?**

(A) N250

(B) P300

(C) N170

(D) P170

**Answer:**
(C)N170

**7** **Which method has the best spatial resolution?**

(A) PET

(B) Reaction-time studies

(C) fMRI

(D) EEG

**Answer:**
(C) fMRI

**8** **Which method has the best temporal resolution?**

(A) fMRI

(B) EEG

**Answer:**
(B) EEG

(C) PET

(D) Brain lesions

**9** **Which method is classed as an invasive procedure?**

(A) fMRI

(B) Single-cell electrophysiology

(C) EEG

(D) TMS

**Answer:**
(B) Single-cell electrophysiology

**10** **Which of following is TRUE about the sympathetic nervous system?**

(A) It decreases arousal (heart rate, breathing, pupil size)

(B) It increases arousal (heart rate, breathing, pupil size)

(C) It coordinates muscle activity

(D) It is part of the central nervous system

**Answer:**
(B) It increases arousal (heart rate, breathing, pupil size)

**11** **Which of the following primates is not normally used to create experimental brain lesions?**

(A) Rhesus monkey

(B) Marmoset

(C) Chimpanzee

(D) Japanese macaque

**Answer:**
(C) Chimpanzee

**12** **Which of the following statements is an accurate description of how TMS works?**

(A) The stimulating coil contains an electric current which generates a magnetic field and this

**Answer:**
(D) The stimulating coil contains an electric current which generates a magnetic field and this induces a secondary

prevents neurons from firing.

(B) The stimulating coil contains a powerful magnet that induces a secondary electric current in the brain.

(C) The stimulating coil contains a powerful magnet and this prevents neurons from firing.

(D) The stimulating coil contains an electric current which generates a magnetic field and this induces a secondary electric current in the brain.

electric current in the brain.

**13**

**Which of the following statements is TRUE?**

(A) Epigenetics refers to small changes to the DNA sequence.

(B) The human genetic code is organized on to 23 pairs of chromosomes.

(C) The expression of genes is fixed from birth.

(D) Different cells of the body contain different versions of the genetic code.

**Answer:**
(B) The human genetic code is organized on to 23 pairs of chromosomes.

**14**

**Why does an EEG signal need to be averaged over many trials to generate an ERP?**

(A) EEG has a poor spatial resolution.

(B) EEG has a low signal:noise ratio.

(C) The scalp potentials from a single EEG trial are too weak to measure.

(D) To ensure that the ERP is reliable over time

**Answer:**
(B) EEG has a low signal:noise ratio.

**15**

**What measurement is obtained in studies using diffusion tensor imaging?**

(A) Fractional anisotropy

(B) BOLD

(C) Voltage

**Answer:**
(A) Fractional anisotropy

(D) Grey-matter density

**16** **What is typically recorded in the method of single cell recording?**

(A) The amplitude of action potentials

(B) The electrical activity at the scalp

(C) The change in blood flow associated with neural activity

(D) The number of action potentials per second

**Answer:**
(D) The number of action potentials per second

**17** **Electromyography (or EMG) is a measure of what?**

(A) Electrical activity associated with the sympathetic system

(B) Electrical activity associated with muscle movement

(C) The skin conductance response

(D) Electrical activity in the brain stem

**Answer:**
(B) Electrical activity associated with muscle movement

**18** **How long does it take the skin conductance response to peak after viewing an eliciting stimulus?**

(A) 1–5 seconds

(B) 0–1 seconds

(C) 5–10 seconds

(D) 10–15 seconds

**Answer:**
(A) 1–5 seconds

**19** **If a patient is impaired on task A but impaired on task B this is normally called a:**

(A) Double dissociation

(B) Single dissociation

**Answer:**
(B) Single dissociation

(C) Syndrome

(D) Virtual lesion

**20** **Neurons selectively respond to certain types of information in the environment. How is this achieved?**

(A) The amplitude of the action potential is greater for certain types of information.

(B) Different neurochemicals are released depending on the stimulus being processed.

(C) Different dendritic configurations are used for different types of information.

(D) The frequency of the action potential is greater for certain types of information.

**Answer:**
(D) The frequency of the action potential is greater for certain types of information.

**21** **The approach of using patients with acquired brain damage to inform theories of normal cognition is called:**

(A) Information processing

(B) Reductionism

(C) Cognitive neuropsychology

(D) Psycho-neurology

**Answer:**
(C) Cognitive neuropsychology

**22** **The autonomic nervous system has two branches termed the:**

(A) Sympathetic and parasympathetic nervous system

(B) Central and peripheral nervous system

(C) Sympathetic and somatic nervous system

(D) Central and somatic nervous system

**Answer:**
(A) Sympathetic and parasympathetic nervous system

**23** **The change in BOLD signal over time as a result of changes**

**in neural activity is called:**

(A) Voxel-based morphometry

(B) Cognitive subtraction

(C) Stereotactic normalisation

(D) Haemodynamic response function

**Answer:**
(D) Haemodynamic response function

**24**

**The process of mapping the geometry of a brain to a standard reference brain is known as:**

(A) Smoothing

(B) Signal-to-noise correction

(C) Random field theory

(D) Stereotactic normalisation

**Answer:**
(D) Stereotactic normalisation

**25**

**The process of spreading the activation of one voxel into neighbouring voxels is known as:**

(A) Stereotactic normalisation

(B) Signal-to-noise correction

(C) Random field theory

(D) Smoothing

**Answer:**
(D) Smoothing

**26**

**What does fMRI directly measure?**

(A) Electrical activity

(B) Concentration of deoxyhaemoglobin in the blood

(C) Magnetic fields created by neuronal firing

(D) The dilation of blood vessels in the brain

**Answer:**
(B) Concentration of deoxyhaemoglobin in the blood

**27** **What is meant by the reliability of a method?**

(A) The extent to which two independent raters would generate the same answers

(B) The extent to which a method has real-world applicability

(C) A statistical method for reducing the complexity of a data set

(D) The extent to which the same measure would yield the same result if repeated

**Answer:**
(D) The extent to which the same measure would yield the same result if repeated

**28** **What is the name of the raised folds of the cortex?**

(A) Sulci

(B) Fissures

(C) Lobes

(D) Gyri

**Answer:**
(D) Gyri

**29** **What is the term given to a disruption of blood supply to the brain that may result in brain damage or death?**

(A) Edema

(B) Stroke

(C) Herpes-simplex encephalitis

(D) Split-brain

**Answer:**
(B)Stroke

**30** **Why is a baseline condition(s) needed in functional imaging experiments?**

(A) Because the brain is always physiologically active

(B) Because the temporal resolution is poor

(C) To give a better spatial resolution

**Answer:**
(A) Because the brain is always physiologically active

(D) To solve the ‘inverse problem’