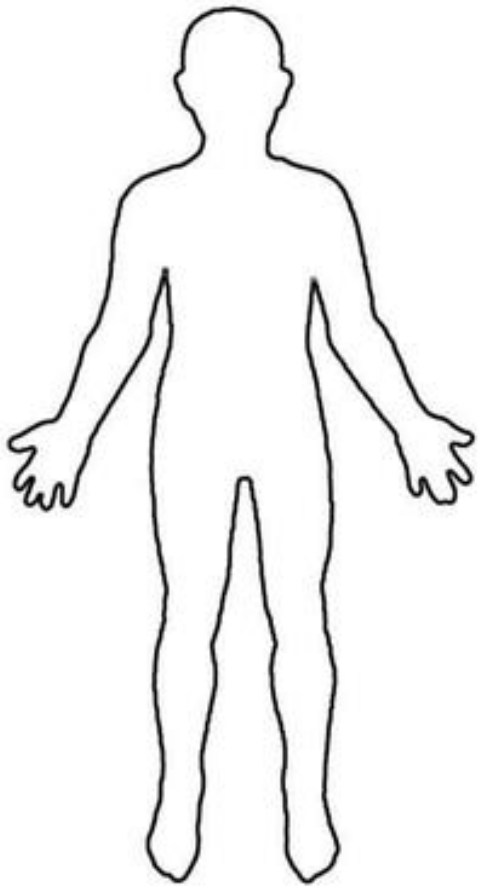
Biopsychology Revision Booklet

Draw onto the person the central nervous system, peripheral nervous system and key endocrine glands.



In the table below, identify the function of each aspect of the nervous system. This may require extra internet research!

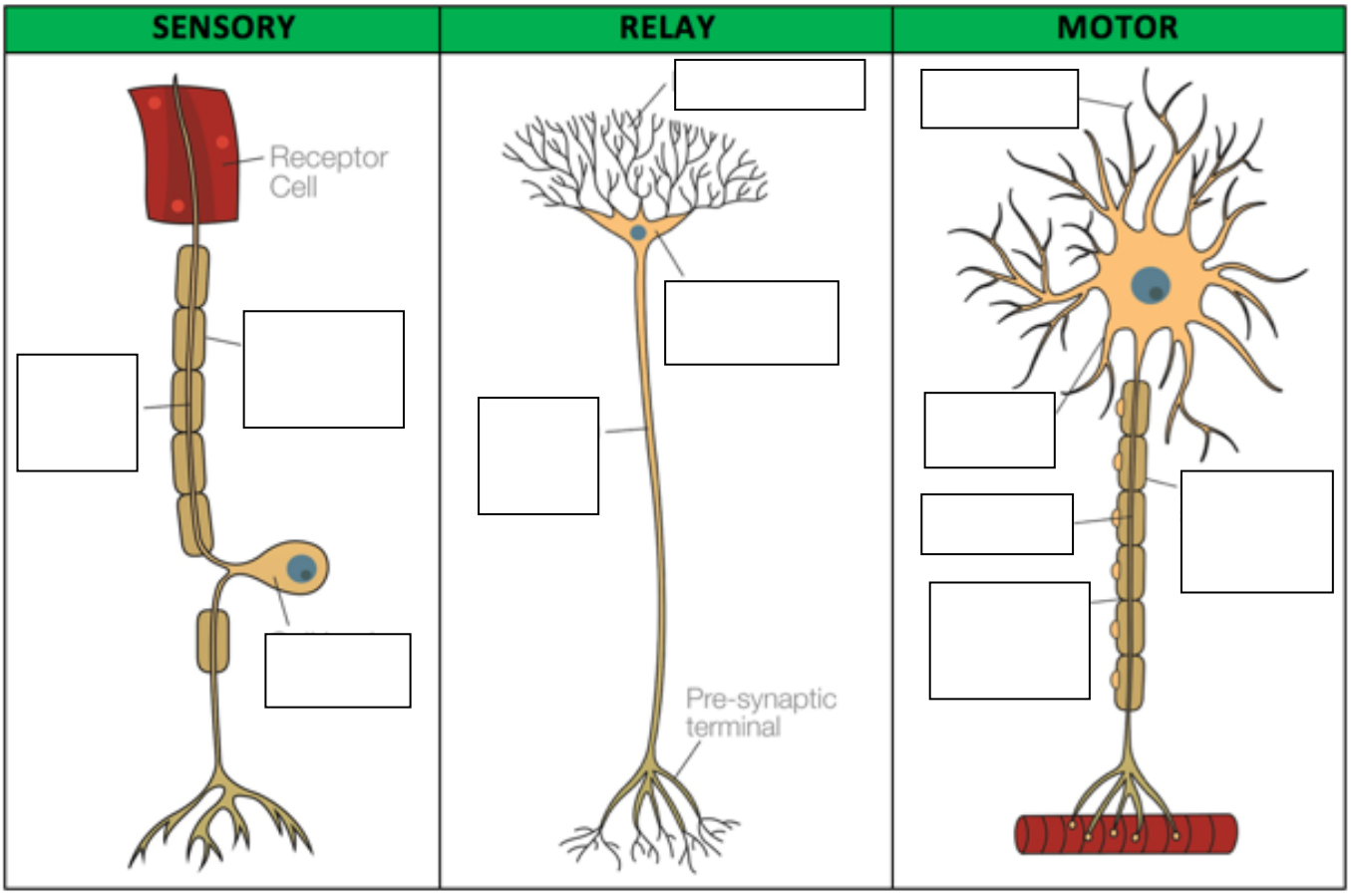
Human nervous system	
Central nervous system	
Peripheral nervous system	
Autonomic nervous system	
Somatic nervous system	
Sympathetic nervous system	
Parasympathetic nervous system	

Explain the function of the following glands below:

ADRENAL GLAND

PITUITARY GLAND

Read the fight or flight section on page 35. Using one example, explain what is meant by the fight or flight response. [3 marks]



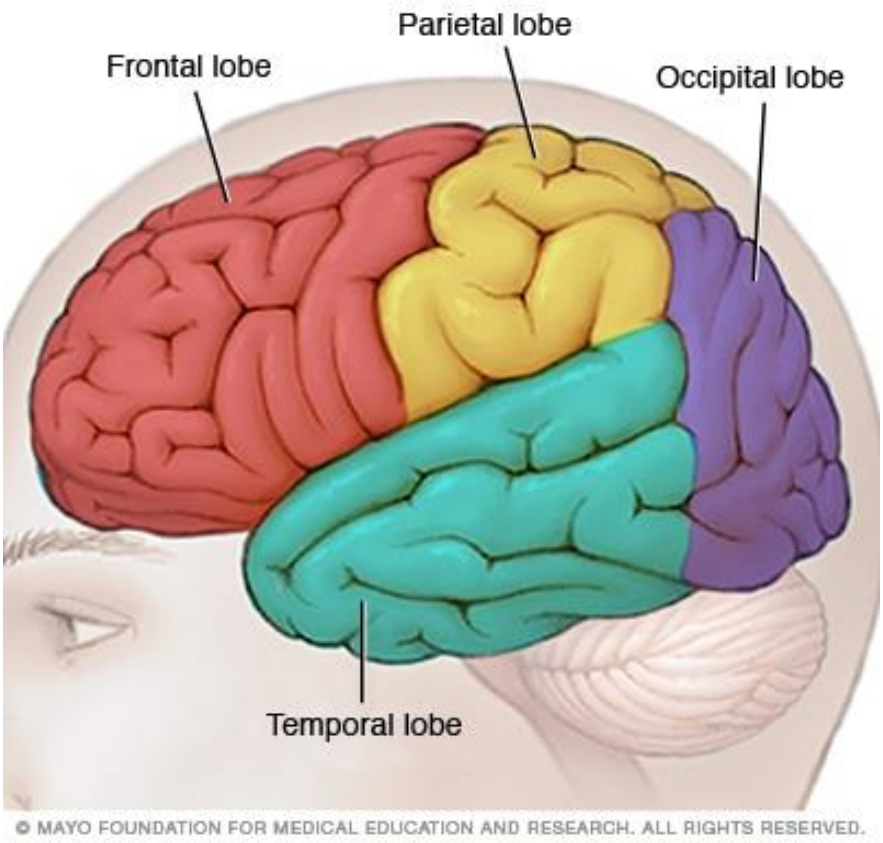
Annotate the above images of neurons WITHOUT using notes

Explain what is meant by an 'action potential'

Draw and fully label synaptic transmission below.

Explain what is meant by a neurotransmitter having an 'excitatory effect'. [2 marks]

Explain what is meant by a neurotransmitter having an 'inhibitory effect'. [2 marks]



Label on this diagram the following:

Cerebellum

Auditory Area/Cortex

Broca's Area

Motor Area/Cortex

Somatosensory Area/Cortex

Visual Area/Cortex

Wernicke's Area

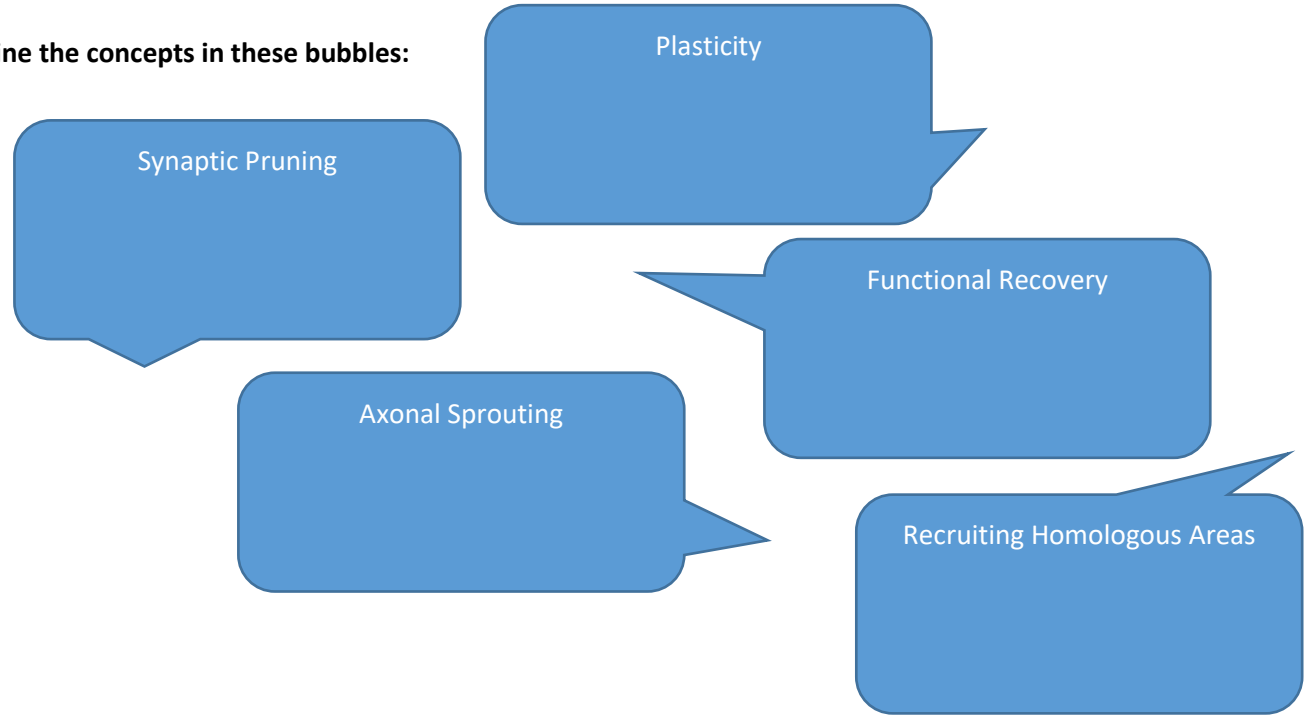
Draw a line to match the definition to the concept OR the function to the brain centre…

Cerebellum	This area of the brain is at the rear frontal lobe and is responsible for voluntary muscle movement.
Auditory Area/Cortex	When this area of the brain is damaged, you have aphasia causing slowed or influent speech.
Broca's Area	An area at the back of the brain that coordinates and regulates muscle activity.
Broca's Aphasia	The region of the frontal lobe (left side) responsible for speech production.
Wernicke's Area	Part of the temporal lobe that processes audio information e.g. hearing.
Wernicke's Aphasia	When this area of the brain is damaged, you produce nonsense words due to incomprehension.
Motor Area/Cortex	The region of the temporal lobe (left side) responsible for language comprehension.
Somatosensory Area/Cortex	The processing unit for 'touch' information e.g. pressure and heat.

Complete the below structure for the Maguire et al. (2000) study into plasticity & functional recovery.

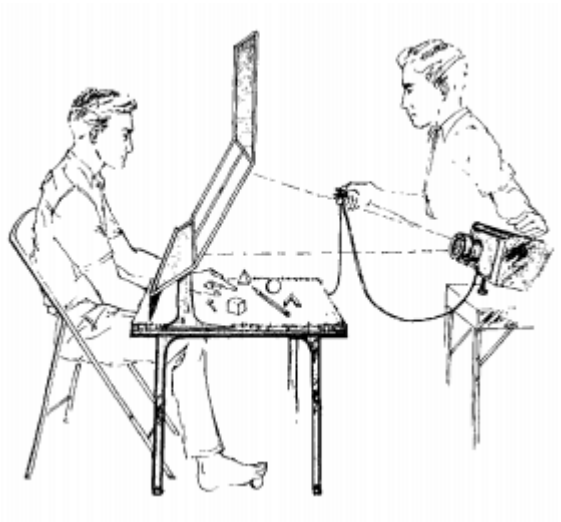
Aim	
Research Method	
Procedure	
Results	
Conclusions	
Evaluation	

Define the concepts in these bubbles:



Hemispheric Lateralisation – the idea that the two different hemispheres are functionally different rather than mirrored sides; e.g. language in localised to the left hemisphere via Broca's and Wernicke's areas.

Sperry 1968 studied 'split brain patients' who had experienced a commissurotomy (the corpus callosum had been cut) to prevent communication across the longitudinal fissure (to reduce severity of epileptic seizures).



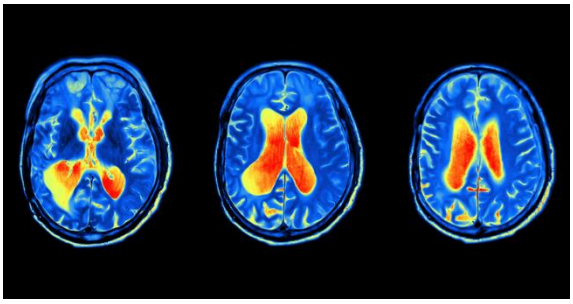
Outline the procedure and findings of three different experiments conducted as part of Sperry's split-brain research.

Through this research, Sperry was able to conclude:

1. Hemispheric lateralisation existed and the two hemispheres were in fact functionally different

2. Language and speech are located in the left hemisphere while visual & motor functions were predominantly located in the right hemisphere.

Complete the sections below next to the 'way of investigating the brain'.



Define fMRI:

Explain what it shows:

Strengths:

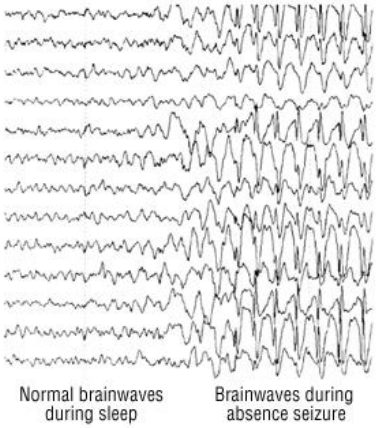
Limitations:

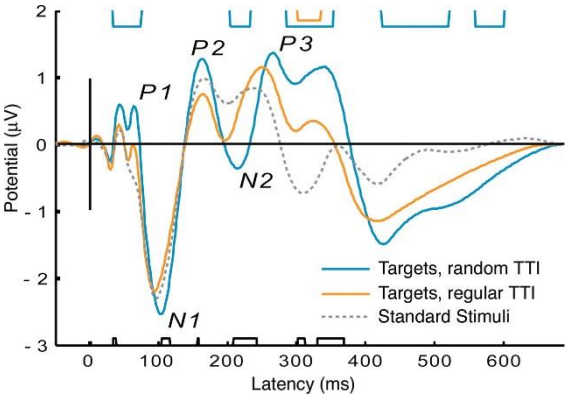
Define EEG:

Explain what it shows:

Strengths:

Limitations:





Define ERP:

Explain what it shows:

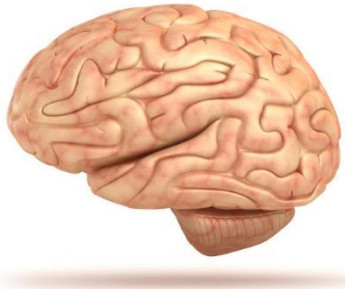
Strengths:

Limitations:

Define post mortem:

Explain what it shows:

Strengths / Limitations:



Define 'biological rhythms'.

Biological rhythms are determined by:
1. ENDOGENOUS PACEMAKERS (internal biological clocks, e.g. the suprachiasmatic nucleus, SCN)
2. EXOGENOUS ZEITGEBERS (external cues, e.g. daylight hours or mealtimes)

Explain each of the following:

Circadian Rhythm	
Infradian Rhythm	
Ultradian Rhythm	

Research into the circadian rhythm of the sleep-wake cycle has illustrated the power of endogenous pacemakers… Outline each below and show after each WHAT DOES THIS SHOW?

Siffre 1962

Aschoff & Wever 1976

Folkard et al. 1985

The female menstrual cycle is a good example of an infradian rhythm (24 to 35 days). Research into this biological cycle has illustrated the power of exogenous zeitgeber. Outline the study below and then outline the sleep cycle on the right.

Stern & McClintock 1998

Stage 1 & 2

Stage 3 & 4

Stage 5 (REM)

The influence of endogenous pacemakers & exogenous zeitgebers on our biological rhythms:

Study	Procedure	Findings	What does this show about our biological rhythms?
DeCoursey et al. (2000)			
Miles et al			
Campbell & Murphy (1998)			