Question 1

0 1 Describe the ego **and** superego according to the psychodynamic approach.

[4 marks]

Marks for this question: AO1 = 4

For each description award:
2 marks: for a clear description of the part of personality with some detail
1 mark: a limited and/or muddled description.

Possible content:
- the ego: rational, balancing the id and superego, reference to 'reality principle', formed between 18mths–3yrs.
- the superego: reference to 'morality principle', acts as the conscience or moral guide, represents the ego ideal/ideal self, based on parental and societal values, formed between 3–6yrs.

Credit other relevant content.

Question 2

0 6 Outline how behaviourists explain learning through the process of operant conditioning.

Compare operant conditioning with social learning.

[8 marks]

Marks for this question: AO1 = 3 and AO3 = 5

Level	Marks	Description
4	7–8	Knowledge of how behaviourists explain learning through the process of operant conditioning is accurate with some detail. Comparison of operant conditioning with social learning is thorough and effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear, coherent and focused. Specialist terminology is used effectively.
3	5–6	Knowledge of how behaviourists explain learning through the process of operant conditioning is evident but there are occasional inaccuracies/omissions. Comparison of operant conditioning with social learning is mostly effective. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.
2	3–4	Limited knowledge of how behaviourists explain learning through the process of operant conditioning is present. Focus is mainly on description. Any comparison of operant conditioning with social learning is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1–2	Knowledge of how behaviourists explain learning through the process of operant conditioning is limited. Comparison of operant conditioning with social learning is very limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content – outline:

- learning is shaped (and maintained) by its consequences/determined by association between response and consequences
- types of reinforcement (positive/negative) and their role in increasing the likelihood of a behaviour being repeated
- role of punishment in extinguishing behaviour
- Skinner's research.

Possible comparisons:

- direct/indirect reinforcement – in operant conditioning these processes are direct but in social learning these are vicarious/indirect and can occur through observation and imitation
- both assume that human development is a consequence of nurture; babies are born as 'blank slates upon which experience writes'; both suggest that behaviour is a result of learned associations and reinforcement/punishment; social learning involves mediational processes (cognition) and operant conditioning does not
- operant conditioning assumes a hard determinism position, that all behaviour is environmentally determined by external influences that we are unable to control (environmental determinism); social learning assumes a soft determinism position, that as well as being influenced by our environment cognitive factors can mediate learning, we also exert some influence upon it through the behaviours we choose to perform (reciprocal determinism)
- operant conditioning takes a reductionist approach to the study of behaviour by breaking complex actions into the simplest observable actions of the stimulus and the response; social learning is less reductionist because it allows for cognitive factors to mediate this learning
- both are nomothetic, believing we have shared processes for learning behaviour and using generalisation to develop general principles or laws of human behaviour
- both assume that all aspects of behaviour can be investigated scientifically and use laboratory experiments.

Credit other relevant material.

Question 3

0 1 Outline the emergence of psychology as a science.

[4 marks]

Marks for this question: AO1 = 4

Level	Marks	Description
2	3–4	There is a clear outline of the emergence of psychology as a science with some accurate detail. The answer is generally coherent with effective use of appropriate terminology.
1	1–2	There is limited or partial outline of the emergence of psychology as a science. The answer lacks coherence and use of appropriate terminology.
	0	No relevant content.

Possible content:

- in 1879 Wundt opened a laboratory designated to the scientific study of psychological enquiry under controlled conditions facilitating accurate measurements and replication
- in the early 1900s behaviourism emerged where researchers such as Watson and Skinner conducted controlled experiments on observable and thus objective behaviour
- in the 1950s the cognitive approach legitimised the study of the mind using controlled experiments. Cognitive psychologists used concrete computer models to help explain mental processes
- in the 1980s the biological approach used controlled measures like fMRIs to study observable behaviours and to objectively measure physiological processes as they happen. Advances in technology also allowed genetic testing to investigate the relationship between genes and behaviour.

Full credit can be awarded for a description of Wundt's contributions to the emergence of psychology as a science.

Credit other relevant content.

Question 4

0 6 Outline and briefly discuss cognitive neuroscience.

[8 marks]

Marks for this question: AO1 = 3 and AO3 = 5

Level	Marks	Description
4	7–8	Knowledge of cognitive neuroscience is accurate with some detail. Discussion is thorough and effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear, coherent and focused. Specialist terminology is used effectively.
3	5–6	Knowledge of cognitive neuroscience is evident but there are occasional inaccuracies/omissions. Discussion is mostly effective. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.
2	3–4	Limited knowledge of cognitive neuroscience is present. Focus is mainly on description. Any discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1–2	Knowledge of cognitive neuroscience is very limited. Discussion is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- cognitive neuroscience aims to explore the neurobiological basis of thought processes and disorders
- cognitive neuroscience has emerged with improvements in technology such as fMRI and PET scans
- cognitive science was formally formed in MIT in 1956 and cognitive neuroscience was coined by George Miller and Michael Gazzaniga in the 1970s.

Possible discussion points:

- more scientific/objective in research study
- nature/nurture debate – cognitive neuroscience has demonstrated the brain's plasticity throughout life supporting the role of experience
- free will/determinism debate – cognitive neuroscience demonstrates the role of experience in shaping the brain showing biology is not destiny
- research studies identifying neurological basis of mental processes, eg Tulving (1994) PET scan study on memory, Burnett et al. (2009) neurological network associated with guilt
- provided neurobiological basis of certain psychological disorders (eg role of the parahippocampal gyrus in OCD) resulting in the development of new therapeutics and removing blame and stigma
- ethics, eg controversial use of mind mapping for lie detection in courts
- early identification for cognitive problems prior to observable behaviour has provided potential for early intervention
- provides evidence to support previously controversial behavioural findings by illuminating mechanisms of cognitive development that underlie behavioural observations.

Credit other relevant material.

Question 5

0 3 Choose **two** glands in the endocrine system and explain the functions of **each** gland.

[4 marks]

Marks for this question AO1 = 4

Award **up to 2 marks** for **each** gland as follows:

2 marks for a clear and coherent explanation of the function of a gland

1 mark for a muddled/limited explanation.

Possible content:

- the pituitary gland controls the release of hormones from all other glands, eg it produces adrenocorticotrophic hormone (ACTH) which is involved in the stress response by stimulating the production and release of cortisol from the adrenal glands
- the thyroid gland produces thyroxine which aids heart and digestive functioning, metabolism, brain development, bone health and muscle control
- the adrenal gland produces adrenaline which triggers the fight or flight response and increases heart rate, breathing rate, contracts blood vessels etc
- the testes produce testosterone which controls the development of male physical features such as development of male genitalia, facial and body hair growth, deepening of the voice etc. Also involved in development of masculine gender
- the ovaries produce oestrogen which controls the development of female physical features such as development of female genitalia, breast development, menstruation, etc. Also involved in development of feminine gender
- the pancreas produces insulin which maintains normal blood glucose levels by allowing cells to absorb glucose from the blood. Also involved in the breakdown of fat and protein.

Credit accurate functions of other glands.

Note: No marks for simply naming glands.

Question 6

0 7 Describe the divisions of the nervous system.

[6 marks]

Marks for this question: AO1 = 6

Level	Marks	Description
3	5–6	Knowledge of the divisions of the nervous system is accurate and detailed. The answer is clear and coherent with effective use of terminology.
2	3–4	Knowledge of the divisions of the nervous system is evident but there may be some detail missing. The answer lacks clarity and/or accuracy in places. Use of terminology is inappropriate on occasions.
1	1–2	Knowledge of the divisions of the nervous system is limited or muddled. Use of terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:

- the nervous system is divided into the central and peripheral nervous systems
- the CNS comprises the brain and spinal cord
- the peripheral nervous system is further divided into the somatic nervous system and the autonomic nervous system (ANS)
- the somatic nervous system consists of sensory and motor neurons to carry sensory and motor information to and from the CNS and also enables reflex actions
- the ANS acts largely unconsciously/involuntary
- the ANS is divided into the sympathetic nervous system (SNS) and the parasympathetic nervous system (PNS)
- the SNS prepares us for flight or fight
- the PNS balances the sympathetic nervous system providing ‘rest and digest’ functions.

Note: content presented in diagrams can be credited.

Credit other relevant material.

Question 7

0 7 Outline the difference between endogenous pacemakers and exogenous zeitgebers. Use examples in your answer.

[2 marks]

Marks for this question: AO1 = 2

2 marks for a clear outline with appropriate use of examples.

1 mark for a limited/muddled outline with inappropriate/no use of examples.

Possible content:
- endogenous pacemakers are internal whereas exogenous zeitgebers are external
- endogenous pacemakers are body clocks which regulate biological rhythm whereas exogenous zeitgebers are cues that entrain our biological rhythms
- examples used to illustrate the difference between the two influencers, eg the effects of the SCN (endogenous pacemaker) as opposed to light (exogenous zeitgeber).

Credit other relevant material.

Question 8

0 6 Using the letters given in **Figure 1**, correctly identify the areas of the brain to complete the table below.

[4 marks]

Marks for this question: AO1 = 4

1 mark for each of the following:

	Area of brain
Which area is responsible for processing sensations such as pain and pressure?	**C**
Which area processes information such as colour and shape?	**D**
Which area processes information such as pitch and volume?	**E**
Which area is responsible for voluntary movements?	**B**

Question 9

1 1 Outline and evaluate split-brain research.

[8 marks]

Marks for this question: AO1 = 3, AO3 = 5

Level	Marks	Description
4	7–8	Knowledge of split-brain research is accurate with some detail. Evaluation is thorough and effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear, coherent and focused. Specialist terminology is used effectively.
3	5–6	Knowledge of split-brain research is evident but there are occasional inaccuracies/omissions. Evaluation is mostly effective. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.
2	3–4	Limited knowledge of split-brain research is present. Focus is mainly on description. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1–2	Knowledge of split-brain research is very limited. Evaluation is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- 'split-brain' patients have had their corpus callosum severed
- Sperry's methodology
- Sperry's key visual/tactile findings
- case of Karen Bryne – Alien Hand Syndrome.

Possible evaluation points:

- 'split-brain' research has enabled discoveries of lateralisation of function
- experiments on split-brain patients were scientific
- research has added to the unity of consciousness debate
- lack of controls: extent of disconnection between hemispheres varied, lack of valid control groups, may be additional effects of surgery other than just procedure, some patients had experienced drug therapy for much longer than others
- artificial data – in real life severed corpus callosum can be compensated for by unrestricted use of two eyes
- 'split-brain' patients may initially suffer from hemispheres acting independently but in an adaptive process one tends to dominate
- issue of generalisability – research relates to small sample sizes, Andrewes (2001) and patients are atypical
- research oversimplifies hemispheric lateralisation – usually hemispheres are constantly communicating, and plasticity allows for compensation across hemispheres
- contradictory findings casting doubt over discoveries made, eg Gazzaniga (1998), patient JW in Turk et al. (2002).

Credit other relevant material.

Question 10

1 2 Explain how the researcher could have used content analysis to analyse the parents' diaries.

[4 marks]

Marks for this question: AO2 = 4

Level	Marks	Description
2	3–4	Explanation of how the researcher could have used content analysis to analyse the parents' diaries is clear and mostly accurate. Application is explicit and appropriate. The answer is generally coherent with effective use of terminology.
1	1–2	Some explanation of how the researcher could have used content analysis to analyse the parents' diaries is evident. Application is limited. The answer lacks accuracy and/or detail. Use of terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:

- the researcher could have begun by reading through some of the parents' diaries to identify potential categories which emerged from the data of the different types of play the parents engaged in with their children
- such categories might include: hide and seek, board games, video games, sports, role-play, going to the park
- the researcher would then have read the diaries again and counted the number of examples which fell into each category to provide quantitative data.

Credit variations in so far as they explain the process.

Question 11

1 9 Design the experiment to investigate whether watching the new TV programme leads to an increase in positive social behaviours in the children, compared with watching the existing TV programme.

In your answer you will gain credit for providing appropriate details of the following:

- the type of experimental design, with justification
- a self-report method of data collection, with justification
- how to control **one** extraneous variable, with justification as to why this would need to be controlled.

[12 marks]

Marks for this question: AO2 = 6 and AO3 = 6

Level	Marks	Description
4	10–12	Suggestions are generally well detailed and practical, showing sound understanding of designing the experiment. All three elements are present. Justifications are appropriate. The answer is clear and coherent. Specialist terminology is used effectively. Minor detail and/or explanation sometimes lacking.
3	7–9	Suggestions are mostly sensible and practical, showing some understanding of designing the experiment. At least two elements are present. There is some appropriate justification. The answer is mostly clear and well organised. Specialist terminology is mostly used effectively.
2	4–6	Some suggestions are appropriate for designing the experiment, but others are impractical or inadequately explained. At least one element is addressed. Justifications are partial, muddled, or absent. The answer lacks clarity, accuracy and organisation on occasions.
1	1–3	Knowledge of designing the experiment is limited. The whole answer lacks clarity, has many inaccuracies and is poorly organised.
	0	No relevant content.

Three elements of design to be credited:

- type of experimental design with justification – eg independent groups design (half the children watched the new TV programme, the other half watched the existing TV programme), repeated measures design (all the children watch both programmes) or matched pairs design and why
- method of data collection – type of self-report technique (questionnaires or interviews, structured/unstructured) and why this would be appropriate, quantitative/qualitative data with justification, description of critical question/key data obtained, avoidance of leading questions, logistical details of data collection, eg postal questionnaire, mobile phone questionnaire etc, with justification, eg high response rate, confidentiality, reducing social desirability bias etc
- controlling **one** extraneous variable with justification why this needs to be controlled, eg minimising distractions whilst the TV show was on, number of siblings in household (if independent groups design), time of day TV programme was watched, order effects (if repeated measures design), minimising demand characteristics by having similar style TV programmes/not informing children of the purpose of the study/avoiding leading questions etc. Justification related to the impact on validity if the identified extraneous variable was not controlled.

Question 12

2 5 Discuss features of science. Refer to **one or more** examples of psychological research in your answer.

[8 marks]

Marks for this question: AO1 = 3, AO2 = 3 and AO3 = 2

Level	Marks	Description
4	7–8	Knowledge of the features of science is accurate with some detail. Application and discussion is effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear, coherent and focused. Specialist terminology is used effectively.
3	5–6	Knowledge of the features of science is evident but there are occasional inaccuracies/omissions. There is some appropriate application/discussion. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.
2	3–4	Limited knowledge of the features of science is present. Focus is mainly on description. Any application/discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1–2	Knowledge of the features of science is very limited. Application/discussion is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- objectivity and the empirical method
- replicability and falsifiability
- theory construction and hypothesis testing
- paradigms and paradigm shifts.

Possible application/discussion:

- use of research studies/theories/approaches to discuss the features of science
- comparison of approaches to discuss features of science, eg Freud's psychodynamic approach is unfalsifiable
- difficulties of the subjective nature of psychological investigations
- prevalent paradigms, eg behaviourism in 1920s onwards, 1970s paradigm shift – the cognitive revolution.

Credit other relevant material.

Question 13

2 3 Explain **three** reasons for this choice in the context of this study.

[6 marks]

Marks for this question: AO2 = 6

1 mark for each of the following reasons:

- experimental design is independent/unrelated
- the 2-year-old and 4-year-old children only took part in one condition/are different participants
- the data is interval
- measured time/minutes (spent in the sandpit is a universal/standardised measure)
- testing for a difference
- compared the times 2-year-old and 4-year-old children spend/play in the sandpit.

Question 14

1 6 Suggest a more appropriate statistical test of difference for the student to use with this data. Explain **two** reasons for your choice based on the description of the study.

[5 marks]

Marks for this question: AO3 = 5

1 mark for naming an appropriate test: Wilcoxon test (can also credit Sign test or related t-test)

Plus **one** mark for each of the following:

- same children judge both pictures
- so the study is a repeated/related design (not independent as would be appropriate for an unrelated t-test)
- data are ratings on a scale of sadness 1–10, ie the child's subjective opinion
- there is no fixed unit of sadness therefore the data are at the ordinal level of measurement/ non-parametric

3rd and 4th bullet for sign test: (can be treated as) nominal/categorical data plus justification - sadness scale could be categorised into categories eg 'sad', 'not sad'
3rd and 4th bullet for related t-test: can be treated as interval with justification ie test is robust enough to cope with data on a numerical scale

Appropriate reason can be credited even if an incorrect test is named or no test is given.

Question 15

0 6 Suggest a more appropriate statistical test of difference for the student to use with this data. Explain **two** reasons for your choice based on the description of the study.

[5 marks]

Marks for this question: AO3 = 5

1 mark for naming an appropriate test: Wilcoxon test (can also credit Sign test or related t-test)

Plus **one** mark for each of the following:

- same women judge both descriptions
- so the study is a repeated/related design (not independent as would be appropriate for an unrelated t-test)
- data are ratings on a scale of liking 1–10, ie the women's subjective opinion
- there is no fixed unit of liking therefore the data are at the ordinal level of measurement/ non-parametric

3rd and 4th bullet for sign test: (can be treated as) nominal/categorical data plus justification - liking scale could be categorised into categories eg 'like', 'dislike'
3rd and 4th bullet for related t-test: can be treated as interval with justification ie test is robust enough to cope with data on a numerical scale

Appropriate reason can be credited even if an incorrect test is named or no test is given.

Question 16

2 1 What do the mean and standard deviation values in **Table 2** suggest about the effect of the recreational screen time on test performance? Justify your answer.

[4 marks]

Marks for this question: AO2 = 2 and AO3 = 2

Mean:
1 mark for suggestion – recreational screen time has a negative impact on test performance.
Accept alternative wording.

Plus

1 mark for justification – mean test performance is higher when there is no recreational screen time (Group A) than when recreational screen time is unrestricted (Group B).
Accept alternative wording.

Standard deviation:
1 mark for a suggestion – the impact of recreational screen time on test performance is not consistent.
Accept alternative wording.

Plus

1 mark for a justification – there was a wider variation of test performances/higher standard deviation in Group B compared to Group A.
Accept alternative wording.

Note: **0 marks** for just stating the data from the table.

Note: Justifications are not creditworthy in isolation.

Question 17

1 5 What do the median and range values presented in **Table 1** suggest about the students' stress ratings after each condition? Justify your answer.

[4 marks]

Marks for this question: AO2 = 2 and AO3 = 2

Median:

1 mark for interpreting what the median suggests about the effect of the 2 km breaktime run on the students' stress ratings – students are less stressed after the 2 km breaktime run/condition A (than when they do not run at breaktime/condition B).

Accept alternative wording.

PLUS

1 mark for an accurate justification about the difference in the median stress ratings in each condition – median stress ratings is lower in condition A (than condition B) or median stress ratings is higher in condition B (than condition A).

Accept alternative wording.

Range:

1 mark for an accurate comment about what the ranges suggest about the spread of stress ratings in each condition – stress ratings are more consistent in condition B (than condition A) or stress ratings are less consistent in condition A (than condition B).

Accept alternative wording.

PLUS

1 mark for a justification about the difference between the ranges in each condition – range is greater in condition A (than condition B) or range is smaller in condition B (than in condition A).

Accept alternative wording.

Note – **0 marks** for just stating the data from the table.

Note – Justifications are not creditworthy in isolation.

Note – Credit can be given to responses which suggest stress levels are similar between conditions due to a minimal difference (of 1.5) in median stress levels.