Your version is ☐☐✖☐☐ . Please copy your version into your answer sheet. Please answer the questions first here (and on the scratch paper). At the end of the exam copy your answers into the answer sheet and sign the answer sheet. You will return only the answer sheet, you will keep this task sheet. Good luck!

There are different versions. You find the correct answers always in different places (a,b,c,d,e), the answers are still the same.

Question: What is the reference to a variable that can potentially explain the treatment effect but has been neglected in a given experiment?

(4 points)

1a: Control variable.
1b: Independent variable.
1c: Confounding variable.
1d: Dependent variable.
1e: Treatment variable.
See lecture 2.

Question: What type of experimental design rules out potential ordering effects completely?

(more than one answer possible, 5 points)

2a: Factorial design.
2b: Within-subject design.
2c: Single-blind design.
2d: Double-blind design.
2e: Between-subject design.
See lecture 2.

Question: What is the relation between the number of treatments and number of sessions in an experiment?

(4 points)

3a: The number of treatments must be larger than the number of sessions.
3b: The number of treatments and number of sessions must sum up to the number of subjects.
3c: There is no relation between the two as a rule.
3d: The number of treatments must be smaller than the number of sessions.
3e: The number of treatments must be equal to the number of sessions.
See lecture 2. The number of treatments is dictated by the research question(s). The number of sessions is dictated by such considerations as the number of subjects, laboratory size etc. In the end, the number of treatments can be larger, smaller or equal to the number of sessions.

Question: How is indirect control achieved in experimental research?

(more than one answer possible, 5 points)

4a: By using performance related financial incentives.
4b: By assigning subjects to treatment conditions randomly.
4c: By using the strategy method.
4d: By using control questions in addition to instructions.
4e: By using a double-blind design.
See lecture 2.

Question: Which matching protocol would generally require the largest number of participants in case of a repeated game?

(4 points)

5a: Perfect stranger.
5b: Stranger.
5c: Perfect partner.
5d: Partner.
5e: Absolute partner.
See lecture 2. As a matching protocol, perfect stranger requires that the subjects play each other only once. This means that as the number of repetitions increases, so must the number of subjects. Neither 'stranger' nor 'partner' imply a relationship of this kind while 'perfect partner' and 'relative partner' are completely made up.

Question: What is referred to as 'prediction failure' in experimental research?

(more than one answer possible, 5 points)

6a: Inability of subjects to predict the strategy of their opponent.
6b: Inability of subjects to anticipate how they would react emotionally in a given situation.
6c: Inability of subjects to coordinate on a payoff dominant equilibrium.
6d: Inability of subjects to behave rationally.
6e: Inability of subjects to trust each other.
See lecture 3.

Question: Why are financial incentives used in economic experiments?

(more than one answer possible, 5 points)

7a: Non-systematic fluctuations of behavior can be reduced by making outcomes more salient.
7b: Participating in economic experiments can be demanding and therefore, paying to subjects is required by law.
7c: Real money is required in order to prevent deception.
7d: Subjects are more likely to behave rationally when dealing with real money.
7e: Giving money to subjects increases the chance of confirming economic hypotheses.
See lecture 3.

Question: What is the name of an effect where systematically different behavioral outcomes result from objectively equivalent descriptions of a decision problem?

(4 points)

8a: Selection bias.
8b: Framing.
8c: Focal point.
8d: Motivational crowding out.
8e: Extrinsic motivation.
See lecture 5.

Question: What is referred to as the cognitive demand effect?

(4 points)

9a: When subjects feel compelled to behave rationally.
9b: When subjects can infer which treatment they have been assigned to.
9c: When subjects can infer what is expected of them by the experimenter and adjust their behavior accordingly.
9d: When subjects can infer what is expected of them by the society and adjust their behavior accordingly.
9e: When subjects suffer fatigue from a treatment they have been assigned to.
See lecture 5.

Question:

According to some hypothesis, a particular variable results in more pro-social behavior and the results of a given experiment actually support that. If the design is likely to suffer from a demand effect, when should those results *not* be trusted?

(6 points)

10a: When the demand effect would result in less pro-social behavior.
10b: When the demand effect would not affect pro-social behavior in a systematic way.
10c: When the demand effect would not affect pro-social behavior.
10d: The results can never be trusted.
10e: When the demand effect would result in more pro-social behavior.
See lecture 5. The results cannot be trusted only in case both the treatment variable and demand effect result in the same behavior.

Question: Which of the following games belong to the class of Prisoner's Dilemma?

A		B		Γ		Δ		E	
7,7	4,3	3,3	5,1	2,3	0,1	7,7	3,5	6,6	2,8
3,4	1,1	1,5	4,4	1,0	3,2	5,3	5,5	8,2	3,3

(more than one answer possible, 10 points)

11: | a (B) | b (E) | c Γ | d A | e Δ |

See lecture 6. Basically, we need the dominant strategy to result in an outcome that is payoff inferior to one that results from the dominated strategy.

Question: According to the reputation building model, what are the players missing or lacking?

(more than one answer possible, 5 points)

12a: Common knowledge of rationality.
12b: Intrinsic motivation.
12c: Understanding of the rules of the game.
12d: Trust in each other.
12e: Ability to do backward induction.

See lecture 6. The reputation building model postulates that at least one of the players does not think that their opponent is rational, which contradicts common knowledge of rationality between the players. It does not make any claims regarding the other concepts suggested here.

Question: What is meant by 'coordination' in the context of coordination games?

(more than one answer possible, 5 points)

13a: Selecting a strategy that is a best response to the opponent's strategy.
13b: Reaching a payoff dominated equilibrium.
13c: Reaching a payoff dominant equilibrium.
13d: Reaching a risk dominant equilibrium.
13e: Selecting a dominant strategy.

See lecture 7.

Question: If both players are motivated by risk dominance, what is the expected outcome in the following game?

	L	R
U	3,3	1,2
D	2,1	2,2

(4 points)

14: | a (U;L) | b (D;R) | c (D;L) | d (DL;UR) | e (U;R) |

See lecture 7.

Question:

Consider the following four dictators: (i) selfish; (ii) social welfare maximizer; (iii) competitive; and (iv) inequality-averse. One by one and in that exact order, they choose an option (while completely ignoring the other dictators). If each option can be taken only once, which one will be left in the end?

	A	B	Γ	Δ	E
Dictator	10	11	11	12	11
Receiver	16	14	8	21	7

(5 points)

15: | a A | b E | c Γ | d (B) | e Δ |

See lecture 8. As the selfish dictator does not care about the receiver's payoff, they choose option Δ. The social welfare maximizer chooses option A since it results in the highest total payoff for the pair. The competitive dictator chooses option E since it maximizes the difference between them and the receiver. Finally, the inequality-averse dictator must choose between them being three points poorer and them being three points richer than the receiver, in which case they prefer to be ahead by choosing option Γ.

Question: Which of the following statements about an inequality averse subject are true?

(more than one answer possible, 5 points)

16a: The subject may sacrifice some of his payoff in order to decrease payoff differences among all the players.
16b: The subject is not rational.
16c: The subject may sacrifice some of others' payoffs in order to decrease payoff differences among all the players.
16d: Own payoff matters to the subject.
16e: Others' payoffs matter to the subject.

See lecture 8. Basically, the subject cares about the payoffs of everyone involved and is willing to trade them back and forth. A rational decision maker care about his own payoff only.

Question: Can a rational trustor make a positive transfer to the trustee?

(4 points)

17a: Only if the net return is expected to be positive.
17b: Only to reciprocate the trustee's decision.
17c: Only if the experiment is double-blind.
**17d:** Never.
17e: Always.

See lecture 9. 'Rational' here essentially means 'selfish', and selfish players are motivated by their individual payoffs only. So a rational trustor could in principle make a positive transfer but only if a positive net return is expected.

Question: If the subjects are said to be exhibiting reciprocal behavior in some (one-shot) game, what does that imply?

(more than one answer possible, 5 points)

18a: They are playing a sequential-move game.
18b: They are not being rational.
18c: They are being extrinsically motivated.
18d: Their behavior is conditional on the behavior of others.
18e: They do not understand the rules of the game.

See lecture 9. Reciprocal behavior means that their decisions are conditional on the decisions of others, which can only be observed if the game is sequential. By definition, such behavior is not rational.

Question: The following graph summarizes how much different subjects are willing to contribute to the public good in response to the average contribution of the other group members. What can one learn from the type of behavior denoted by X?
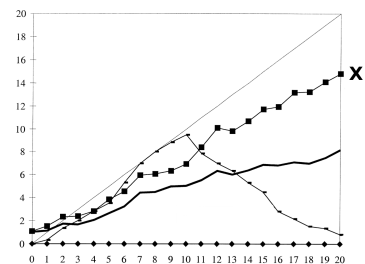
(5 points)

19a: Conditional cooperators exhibit a self-serving bias.
19b: Unconditional cooperators do not behave optimally.
19c: Unconditional cooperators are inequality averse.
19d: Conditional cooperators use punishment too much.
19e: Conditional cooperators are a smaller group than free riders.

See lecture 10. Behavior denoted by X represents somebody who is willing to contribute little to the public good if the other group members contribute little on average and a lot if so do the others. This type of behavior is usually referred to as 'conditional cooperation'. In addition, one can see that the actual contributions generally fall below the 45-degree line, which means that the conditional cooperators tend to contribute less than the other group members on average. Fischbacher et al. (2001) call this phenomenon a self-serving bias.

Question: Consider the following hypotheses:

H_0 : Dominated strategies *cannot* influence the selection of an outcome from the set of Nash equilibria;

H_a : Dominated strategies *can* influence the selection of an outcome from the set of Nash equilibria.

What pattern of results from an experiment involving Game A and Game B below would provide evidence against the null and in favor of the alternative hypothesis?

Game A

	1	2	3
1	35, 35	35, 25	100, 0
2	25, 35	55, 55	0, 0
3	0, 100	0, 0	60, 60

Game B

	1	2	3
1	35, 35	35, 25	70, 0
2	25, 35	55, 55	100, 0
3	0, 70	0, 100	60, 60

(6 points)

20a: Subjects choose 1 in Game A and 3 in Game B.
20b: Subjects choose 2 in both games.
20c: Subjects choose 1 in Game A and 2 in Game B.
20d: Subjects choose 2 in Game A and 3 in Game B.
20e: No such pattern is feasible with these games.

First, one must identify the NE as well as dominated strategies, which are {(1,1); (2,2)} and {3}, respectively (in both games). Note that the games differ in strategy 3 only, which means that any observed difference in play must be due to that very strategy. Then we have to identify a pattern of results s.t. only NE strategies are played and yet they are not the same between the games. A matching pattern is one where the subjects choose action 1 in one game but action 2 in the other game. Also, see lecture 7 and pages 220 and 226 of Cooper et al. (1990).

total number of points: 100
obtainable through randomization: 35
sufficient to pass: 59