Question- 1

Of the several features of the Toyota Production System that have been widely studied, most important is the mode of governance of the shop-floor at Toyota. Work and inter-relations between workers are highly scripted in extremely detailed ‘operating procedures’ that have to be followed rigidly, without any deviation at Toyota. Despite such rule-bound rigidity, however, Toyota does not become a ‘command-control system’. It is able to retain the character of a learning organization.

In fact, many observers characterize it as a community of scientists carrying out several small experiments simultaneously. The design of the operating procedure is the key. Every principle must find an expression in the operating procedure - that is how it has an effect in the domain of action. Workers on the shop-
floor, often in teams, design the ‘operating procedure’ jointly with the supervisor through a series of hypothesis that are proposed and validated or refuted through experiments in action. The rigid and detailed ‘operating procedure’ specification throws up problems of the very minute kind;
while its resolution leads to a reframing of the procedure and specifications. This inter-temporal change (or flexibility) of the specification (or operating procedure) is done at the lowest level of the organization; i.e. closest to the site of action.

One implication of this arrangement is that system design can no longer be rationally optimal and standardized across the organization. It is quite common to find different work norms in contiguous assembly lines, because each might have faced a different set of problems and devised different countermeasures to tackle it. Design of the coordinating process that essentially imposes the discipline that is required in large-scale complex manufacturing systems is therefore customized to variations in man-machine context of the site of action. It evolves through numerous points of negotiation throughout the organization. It implies then that the higher levels of the hierarchy do not exercise the power of the fiat in setting

work rules, for such work rules are no longer a standard set across the whole organization.

It might be interesting to go through the basic Toyota philosophy that underlies its system designing practices. The notion of the ideal production system in Toyota embraces the following - 'the ability to deliver just-in-time (or on demand) a customer order in the exact specification demanded, in a batch size of one (and hence an infinite proliferation of variants, models and specifications), defect-free, without wastage of material, labour, energy or motion in a safe and (physically and emotionally) fulfilling production environment'. It did not embrace the concept of a standardized product that can be cheap by giving up variations. Preserving consumption variety was seen, in fact, as one mode of serving society. It is interesting to note that the articulation of the Toyota philosophy was made around roughly the same time that the Fordist system was establishing itself in the US automotive industry.

Q1: What can be best defended as the asset which the Toyota model of production leverages to give the vast range of models in a defect-free fashion?

A. Large scale complex manufacturing systems.

B. Intellectual capital of the company's management.

C. Loans taken by the company from banks and financial institutions.

D. Ability of workers to evolve solutions to problems.

E. Skill and charisma of the top leadership.

Q2: Which of the following can be best defended as a pre-condition for the Toyota type of production system to work?

A. Existence of workers' union to protect worker's rights.

B. Existence of powerful management to create unique strategies.

C. Cordial worker-management relations to have industrial peace.

D. High management involvement towards problems identified by workers.

E. Management's faith in workers' abilities to solve problems in a rigorous manner.

Q3: Based on the above passage, which of the following statements is best justified?

A. Workers have significant control rights over the design of work rules that allow worker skills and ingenuity to continuously search for novel
micro-solutions using information that often sticks to the local micro-context of the work.

B. Managers have significant control rights over the design of work rules that allow worker skills and ingenuity to continuously search for novel
micro-solutions around micro-information that often sticks to the local micro-context of the work.

C. Work rules enable the workers to report problems faced at the shop-floor to specialised personnel who set up experiments to replicate the condition. This allows the specialists to come up with solutions that are rigorously
tested in experimental conditions.

D. Toyota as an organization has extensive networks with different specialists who are subject matter experts in different fields. These networks allow problems to be resolved in the most advanced manner, enabling Toyota to beat the competition.

E. Toyota's products are extensively tested by customers in simulated conditions before they are released to the market. This extensive
testing is done by workers who double up as a community of scientists experimenting todevelop the most advanced product.

Q4: What could be the best defence of the "different work norms in contiguous assembly lines"?

A. Without such variations allowed, rights of manager to design work-rules would have made very I little sense, making the company similar
to Ford.

B. Proscribing standardised work norms would prevent Toyota from benefiting from workers' problem solving ability in resolving different kinds
of problems that emerge, thus making it difficult to attain the Toyota philosophy.

C. If similarities were imposed, rights of workers to experiment with work-rules would have made very little sense.

D. Standardisation of work rules is only justified when the investments in plants are huge and experimenting with the work rules would be detrimental to the efficiency of the plants. Since Toyota's plants typically involved low investments, it could tolerate non standards work rules.

E. With standardization of processes, right of the workers in design of work-rules made sense. Toyota's manufacturing processes were non-standardised, the different work norms did not make sense.

Question-2

Neo: Morpheus, what's happened to me? What is the place?

Morpheus: More important than what is when.

Neo: When?

Morpheus: You believe it's the year 1999 when in fact it's closer to 2199. I can't tell you exactly what year it is because we honestly don't know. There's nothing I can say that will explain it for you, Neo. Come with me. See for yourself. This is my ship, the Nebuchadnezzar. It's a hovercraft. This is the main deck. This is the core where we broadcast our pirate signal and hack into the Matrix. Most of my crew you already know.

(Next Scene: Construct)

Morpheus: This is the construct. It's our loading program. We can load anything from clothing, to equipment, weapons, training simulations, anything we need.Neo: Right now we're inside a computer program?

Morpheus: Is it really so hard to believe? Your clothes are different. The plugs in your arms and head are gone. Your hair is changed. Your appearance now is what we call residual self image. It is the mental projection of your digital self.Neo: This...this isn't real? Morpheus: What is real. How do you define real? If you're talking about what you can feel, what you can smell, what you can taste and see, then real is simply electrical signals interpreted by your brain. ...This is the world that you know. The world

as it was at the end of the twentieth century. It exists now only as part of a neural-interactive simulation that we call the Matrix. You've been living in a dream world, Neo. ...This is the world as it exists today. Welcome to the Desert of the Real. We have only bits and pieces of information but what we know for certain is that at some point in the early twenty-first century all of mankind was united in celebration. We marvelled at our own magnificence as we gave birth to AI.

Neo: AI? You mean artificial intelligence?

Morpheus: A singular consciousness that spawned an entire race of machines. We don't know who struck first, us or them. But we know that it was us that scorched the sky. At the time they were dependent on solar power and it was believed that they would be unable to survive without an energy source as abundant as the sun. Throughout human history, we have been dependent on machines to survive. Fate it seems is not without a sense of irony. The human body generates more bio-electricity than a 120-volt battery and over 25,000 BTU's of body heat. Combined with a form of fusion the machines have found all the energy they would ever need. There are fields, endless fields, where human beings are no longer born, we are grown. For the longest time I wouldn't believe it, and then I saw the fields with my own eyes. Watch them liquefy the dead so they could be fed intravenously to the living. And standing there, facing the pure horrifying precision, I came to realize the obviousness of the truth. What is the Matrix? Control. The Matrix is a computer generated dream world

built to keep us under control in order to change a human being into this.Neo: No. I don't believe it. It's not possible. Morpheus: I didn't say it would be easy, Neo. I just said it would be the truth.Neo: Stop. Let me out. Let me out. I want out.

Q1: he innate factor responsible for the status of human being in later part of 22nd century is

A. Due to human beings living in a dream would and being happy about it.

B. The ability of human body to generate bio-electricity.

C. The decision to scorch the sky.

D. The development of artificial intelligence by human beings.

E. Due to human beings developing the ability to hack into the matrix.

Q2: Choose the option that cannot be inferred from the idea discussed in the transcript:

A. Morpheus and his crew have developed an ability to hack into the matrix.

B. A ware between human beings and machines has been going on for some decades.

C. The sources of power for human beings and machines were different.

D. Machines require human beings for their survival now.

E. Morpheus and his crew are not entirely controlled by the matrix.

Q3: Unlike other retail outlets, where items are purchased in any number of units the customer wants, in super-markets items are grouped in bulk packages. This bulk buying offers savings to the customer. The option to buy at wholesale prices by buying in bulk makes super-markets a practical choice for budget-conscious consumers.

Which of the following is an assumption necessary to the author's argument?

A. Super-markets often have greater buying power and lower overhead costs, so they can offer a greater variety of products than regular retail outlets.

B. Super-markets are often more conveniently

located and have better parking facilities.

C. The emergence of super-markets has caused
many small retail stores to close down andthus eliminate competition.

D. It is economically wise to buy single items since bulk packages seldom offer significant savings.

E. The financial savings from purchasing bulk packages may outweigh the inconvenience of being unable to purchase in any number of
units that suits the customers' need.

Question 3
"Whatever actions are done by an individual in different embodiments, [s]he reaps the fruit of those actions in those very bodies or embodiments (in future existences) ".

A belief in karma entails, among other things, a focus on long run consequences, i.e., a long term orientation. Such an orientation implies that people who believe in karma may be more honest with themselves in general and in setting expectations in particular--a hypothesis we examine here. This research is based on three simple premises. First, because lower expectations often lead to greater satisfaction, individuals in general, and especially those who are sensitive to the gap between performance and expectations, have the incentive to and actually do "strategically" lower their expectations. Second, individuals with a long term orientation are likely to be less inclined to lower expectations in the hope of temporarily feeling better. Third, long term orientation and the tendency to lower expectations are at least partially driven by cultural factors. In India, belief in karma, with its emphasis on a longer term orientation, will therefore to some extent counter-act the tendency to lower expectations. The empirical results support our logic; those who believe more strongly in karma are less influenced by

disconfirmation sensitivity and therefore have higher expectations.

Consumers make choices based on expectations of how alternative options will perform (i.e., expected utility). Expectations about the quality of a product also play a central role in subsequent satisfaction. These expectations may be based on a number of factors including the quality of a typical brand in a category, advertised quality, and disconfirmation sensitivity. Recent evidence suggests that consumers, who are more disconfirmation sensitive (i.e., consumers who are more satisfied when products perform better than expected or more dissatisfied when products perform worse than expected) have lower expectations. However, there is little research concerning the role of culture-specific variables in expectation formation, particularly how they relate to the impact of disconfirmation sensitivity on consumer expectations.

Q1: “Future existences” in the first paragraph can refer to:

1. Human life, 5 years afterwards

2. Next birth in human form

3. Next birth in any embodiment

Which of the following statement(s) is correct?

A. 1, 2

B. 2, 3

C. 1, 3

D. 2 only

E. None of the three

Q2: Consider the following assertion and conclusion:

Assertion: The meaning of karma in the above passage (refer to first two lines of the paragraph)

Conclusion: Belief that long term consequences are important.

Now read the following statements carefully:

1. The conclusion will always follow the assertion.

2. The conclusion may follow the assertion.

3. The conclusion may follow the assertion only if an individual lives long enough.

4. The conclusion cannot follow the assertion.

Which of the following statement(s) is correct?

A. 1 only

B. 1 and 2.

C. 2 only

D. 3 only

E. 4 only

Q3: Which of following statements, if true, would contradict the first of the three premises mentioned in the first paragraph?

A. Higher satisfaction leads to lower expectation.

B. Lower expectation leads to long term consequences

C. Satisfaction depends on achievement and not on expectation

D. Karma affects our immediate feelings

E. Lower expectation would lead to lower efforts

Q4: Read the following statements carefully:

1. Temporary feelings and law of karma are independent.

2. As per theory of karma, temporary feelings

would not lower the expectation.

3. Temporary feelings and law of karma are contradictory.

Which of the following combination of statements is consistent with the second premise?

A. 1 only

B. 1 and 2

C. 1 and 3

D. 3 only

E. 1, 2 and 3

Question 4

An example of scientist who could measure without instruments is Enrico Fermi (1901-1954), a physicist who won the Nobel Prize in physics in 1938. He had a well-developed knack for intuitive, even casual-sounding measurements. One renowned example of his measurement skills was demonstrated at the first detonation of the atom bomb, the Trinity Test site, on July 16, 1945, where he was one of the atomic scientists observing the blast from base camp. While final adjustments were being made to instruments used to measure the yield of the blast, Fermi was making confetti out of a page of notebook paper. As the wind from the initial blast wave began to blow through the camp, he slowly dribbled the confetti into the air, observing how far back it was scattered by the blast (taking the farthest scattered pieces as being the peak of the pressure wave). Fermi concluded that the yield must be greater than 10 kilotons.

This would have been news, since other initial observers of the blast did not know that lower limit. After much analysis of the instrument readings, the final yield estimate was determined to be 18.6 kilotons. Like Eratosthenes, Fermi was aware of a rule relating one simple observation—the scattering of confetti in the wind—-to a quantity he wanted to measure.

The value of quick estimates was something Fermi was familiar with throughout his career. He was famous for teaching his students skills at approximation of fanciful-sounding quantities that, at first glance, they might presume they knew nothing about. The best-known example of such a ”Fermi question” was Fermi asking his students to estimate the number of piano tuners in Chicago, when no one knows the answer. His students—science and engineering majors—would begin by saying that they could not possibly know anything about such a quantity. Of course, some solutions would be to simply do a count of every piano tuner perhaps by looking up advertisements, checking with a licensing agency of some sort, and so on. But Fermi was trying to teach his students how to solve problems where the ability to confirm the results would not be so easy. He wanted them to figure out that they knew something about the quantity in question.

Q1: Suppose you apply the same logic as Fermi applied to confetti, which of the following statements would be the most appropriate?

A. You can calculate the minimum pressure inside the cooker by calculating the maximum distance travelled by any of its parts after it explodes.

B. You can calculate the average potency of a fire

cracker by calculating the distance covered by one of its bigger fragments.

C. You can easily find out the average potency of an earthquake by measuring the length of a crack it makes on the surface of the earth.

D. You can calculate the exact volume of water stored in a tank by measuring the distance covered by the stream of water coming out of the tap fixed on the lower corner of the tank.

E. All of the above conclusions can be drawn.

Q2: Quick estimate, as per Fermi, is most useful in:

A. In finding an approximate that is more useful than existing values.

B. In finding out the exact minimum value of an estimate

C. In finding out the exact maximum value of an estimate

D. In finding out the range of values of an estimate

E. In finding out the average value of an estimate

Q3: Given below are some statements that attempt to capture the central idea of the passage:

1. It is useful to estimate; even when the exact answer is known.

2. It is possible to estimate any physical quantity.

3. It is possible to estimate the number of units of a newly launched car that can be sold in a city.

4. Fermi was a genius.

Which of the following statement(s) best captures the central idea?

A. 1, 2 and 4

B. 2, 3 and 4

C. 2 and 3

D. 2 only

E. 1, 2 and 3

Q4: Read the statements given below:

1. Atomic bomb detonation was a result of Fermi's Nobel Prize contribution.

2. Fermi's students respected him as a scientist

3. Yield of atomic bomb can only be measured in Kilotons.

Which of the following statement(s) can be inferred
from the passage?

A. 1, 2

B. 2, 3

C. 1, 3

D. 2 only

E. None of the three statements is correct

Question 5

Popper claimed, scientific beliefs are universal in character, and have to be so if they are to serve us in explanation and prediction. For the universality of a scientific belief implies that, no matter how many instances we have found positive, there will always be an indefinite number of unexamined instances which may or may not also be positive. We have no good reason for supposing that any of these unexamined instances will be positive, or will be negative, so we must refrain from drawing any conclusions. On the other hand, a single negative instance is sufficient to prove that the belief is false, for such an instance is logically incompatible with the universal truth of the belief.

Provided, therefore, that the instance is accepted as negative we must conclude that the scientific belief is false. In short, we can sometime deduce that a universal scientific belief is false but we can never induce that a universal scientific belief is true.

It is sometimes argued that this 'asymmetry' between verification and falsification is not nearly as pronounced as Popper declared it to be. Thus, there is no inconsistency in holding that a universal scientific belief is false despite any number of positive instances; and there is no inconsistency either in holding that a universal scientific belief is true despite the evidence of a negative instance. For the belief that an instance is negative is itself a scientific belief and may be falsified by experimental evidence which we accept and which is inconsistent with it. When, for example, we draw a right-angled triangle on the surface of a sphere using parts of three great circles for its sides, and discover that for this triangle Pythagoras' Theorem does not hold, we may decide that this apparently negative instance is not really negative because it is not a genuine instance at all. Triangles drawn on the surfaces of spheres are not the sort of triangles which fall within the scope of Pythagoras' theorem. Falsification, that is to say, is no more capable of yielding conclusive rejections of scientific belief than verification is of yielding conclusive acceptances of scientific beliefs. The asymmetry between falsification and verification, therefore, has less logical significance than Popper supposed.

We should, though, resist this reasoning. Falsifications may not be conclusive, for the acceptances on which rejections are based are always provisional acceptances.

But, nevertheless, it remains the case that, in falsification, if we accept falsifying claims then, to remain consistent, we must reject falsified claims. On the other hand, although verifications are also not conclusive, our acceptance or rejection of verifying instances has no implications concerning the acceptance or rejection of verified claims. Falsifying claims sometimes give us a good reason for rejecting a scientific belief, namely when the claims are accepted. But verifying claims, even when accepted, give us no good and appropriate reason for accepting any scientific belief, because any such reason would have to be inductive to be appropriate and there are no good inductive reasons.

Q1: According to Popper, the statement “Scientific beliefs are universal in character” implies that

A. Positive instances of scientific belief imply that it is universal in character.

B. There are equal numbers of negative and positive instances of a universal scientific belief.

C. If there are negative and positive instances of a scientific belief then it cannot be universal.

D. We can only deduce that a scientific belief is false but cannot induce that it is true.

E. We can only induce that a scientific belief is false but cannot induce that it is true.

Q2: The statement, “this ‘asymmetry’ between verification and falsification is not nearly as pronounced as Popper declared it to be”, implies that

A. Falsification is better than verification in universal acceptance of scientific beliefs.

B. Verification is better than falsification in universal acceptance of scientific beliefs.

C. Both falsification and verification together can result in universal acceptance of scientific beliefs.

D. Capability of falsification in accepting of scientific beliefs is not better than that of verification in rejection of scientific beliefs.

E. Capability of falsification in rejection of scientific beliefs is not always better than that of verification in acceptance of scientific beliefs.

Q3: With which of the following statements, would the author agree most?

A. Verification is better than falsification in establishing the claims.

B. Falsification and verification are equally good in establishing the claims.

C. Verification and falsification are equally bad in establishing the claims.

D. Falsification is better than verification in disproving the claims.

E. Verification is better than falsification in disproving the claims.

Q4: Which of the following would be the most appropriate conclusion?

A. Falsification gives us an appropriate reason for rejecting a scientific belief.

B. Falsification gives us all the reasons for accepting a claim.

C. Verification gives us a reason for rejecting a claim.

D. Verification gives us an appropriate reason for accepting a scientific belief.

E. Verification gives us an appropriate reason for rejecting a scientific belief.

Answer 1

1: OA-D
Toyota is said to have retained the character of a learning organization. In the passage it is described as a community of scientists carrying out several small experiments simultaneously
as workers in each assembly line design their own operating procedure with the help of the supervisor. Different work norms might even exist in contiguous assembly lines, which reflect different, customized approaches to problem solving. The coordinating process is said to evolve through numerous points of negotiation throughout the organization and accordingly
the higher levels of the hierarchy do not exercise the power of the fiat in setting work rules. There is no 'command-control' system despite the presence of rigid operating procedures. So it is the ability of workers to come up with solutions to problems they face on the shop floor which is the key strength of the Toyota model of production.
2: OA-E
The production model in Toyota relies on the ability of workers to come up with solutions to problems they face "closest to the site of action" i.e. on the shop floor. This implies minimal management intervention in the design of work rules. So the best pre-condition for the Toyota type of production to work is management's faith in workers' abilities to solve problems in a rigorous manner.
3. OA-A
The passage talks about how workers in a particular assembly line, with inputs from the supervisor, develop and fine-tune operating procedures in the process of coming up with best solutions for problems they face in their daily operations. This implies that they have significant control rights over the design of work rules and the leeway to devise solutions and procedures that effectively address the local micro-context of the work.
4. OA-B
The Toyota model of production revolves around workers in assembly lines coming up with effective solutions and work rules, which address the problems faced at the very site of action. So it is less a matter of worker's rights (as mentioned in Option C) than the heavy reliance on workers' problem-solving ability that is strength of the Toyota model of production. So option (B) is the best choice here.

Answer 2
1: OA-D
From the passage it is clear that the situation of human beings at the end of the 22nd century was caused by the creation of artificial intelligence by the human race. Thus. Option (D) is the correct answer.
2. OA-C
Statement C cannot be inferred from the passage. A is stated. B

can be inferred- ‘we do not know who struck first’. D is also stated. E can also be inferred as Morpheus talks about hacking into the matrix.
3. OA-E
The argument clearly states that ‘buying in bulk makes super-markets a practical choice for budget-conscious consumers’; option E is the assumption because it has to be true for the conclusion to follow.

Answer 3

1.OA-E
From the first paragraph, it can be inferred that ‘those very bodies or embodiments’ refers to either one’s life form in the current life or to a similar form or embodiment in a future life. Thus, ‘future existences’ does not refer to either of the three statements
2.OA-C
The first statement of the passage merely states that one has to reap the fruits of one’s actions at some point in time after those actions have been committed. However, this not necessarily mean that such consequences are important. The conclusion, therefore, may or may not follow.
3.OA-C
4.OA-B
The second premise states that ‘people with a long term orientation are likely to be less inclined to lower expectations in the hope of temporarily feeling better.’ This implies that those with a belief in the law of karma are not easily swayed by temporary feelings. Thus, statement 1 is consistent with the premise. Statement 2 can be directly inferred from the second premise. Statement 3 does not follow from the given premise. Thus, option B is the correct answer.

Answer 4

1.OA-A
Option A is the answer as it details a situation which is analogous to the one described in the passage, where Fermi estimated the minimum yield of the nuclear blast by using confetti.
2.OA-D
Option A is incorrect as it is not implied in the passage. Options B and C are negated as the passage does not mention that quick estimate is used to arrive at exact values of an estimate. Option D is the correct choice as quick estimate is used to estimate

3. OA-C
Statements 1 and 4 cannot be inferred from the passage. Since the passage talks about Fermi's focus on estimating various physical quantities, statements 2 and 3 can be inferred as being closest to capturing the central idea of the passage. Option C is the correct answer.
4. OA-E
Statement 1 cannot be inferred as the passage is silent on the nature of Fermi's Nobel Prize contribution. It merely mentions that Fermi was 'one of the atomic scientists' who observed the first detonation of the atomic bomb from base camp. There is nothing in the passage to conclude that Fermi's students considered him to be a genius. Thus, statement 2 also cannot be inferred. While the passage mentions the yield of the atomic blast being measured in kilotons, it does not say that this is the only unit for making such a measurement. Thus, none of the statements 1, 2 or 3 can be inferred from the passage and option E is the answer.

Answer 5

1.OA-D
The first paragraph clearly states that when it comes to drawing any conclusion about the universality of scientific belief, 'a single negative instance is sufficient to prove that the belief is false,' and that 'we can sometimes deduce that a universal scientific belief is false but we can never induce that a universal scientific belief is true.' Option D is in line with this and is the answer.
2. OA-E
The statement implies that the 'asymmetry' between verification and falsification is not always in favor of the capability of falsification for rejecting a scientific belief as against that of verification for acceptance of a scientific belief. Thus, option E is the answer.
3.OA-D
The passage mentions that no matter how many instances are used to verify a theory, it takes just one case of falsification to disprove a claim. Thus, clearly, falsification is better hen verification in disproving any claims. Therefore, option D is the answer. Option A is not supported by the information in the passage. Options B, C and E are contrary to what is mentioned in the passage.
4. OA-A
Options C, D and E are contrary to what is stated in the passage. Option B cannot be inferred from the information in the passage. Option A is, however, is correct as the passage mentions that 'a single negative instance is sufficient to prove that the belief is false, for such an instance is logically incompatible with the universal truth of the belief.