

Mock CAT – 08 2018

Scorecard (procreview.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 05:52:41 UTC 2019&qsetId=ZDaxl4IK2Zc=&qsetName=Mock CAT – 08 2018)

Accuracy (AccSelectGraph.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 05:52:41 UTC 2019&qsetId=ZDaxl4IK2Zc=&qsetName=Mock CAT – 08 2018)

Qs Analysis (QsAnalysis.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 05:52:41 UTC 2019&qsetId=ZDaxl4IK2Zc=&qsetName=Mock CAT – 08 2018)

Video Attempt (VideoAnalysis.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 05:52:41 UTC 2019&qsetId=ZDaxl4IK2Zc=&qsetName=Mock CAT – 08 2018)

Solutions (Solution.jsp?sid=aaa5BycB_LJvH-TdBuPHwSun Jan 20 05:52:41 UTC 2019&qsetId=ZDaxl4IK2Zc=&qsetName=Mock CAT – 08 2018)

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VARC

LRDI

QA

Sec 1

Directions for questions (1 to 6): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

What makes a communications technology revolutionary? One answer to this is to ask whether it fundamentally changes the way society is organized. This can be a very hard question to answer, because true fundamental changes alter society in such a way that it becomes difficult to speak of past society without imposing our present understanding.

Today we rightly think of the internet and the mobile phone, but long ago, the printing press and the telegraph both had just as heavy an impact on the development of society.

Before the printing press there were no books, not in the sense that we understand them. There were manuscripts that were copied by scribes, which contained inconsistencies and embellishments, and modifications that suited who the scribe was working for.

The printing press increased the speed of communication and the spread of knowledge: Far less man hours were needed to turn out 50 printed books than 50 scribed manuscripts.

Henry Ford famously said of life before the car "If I had asked people what they wanted, they would have said faster horses". This sentiment could be equally applied to the telegraph, a communications technology that came about 400 years after the printing press.

The telegraph brought changes similar in many ways to the printing press: It allowed for an accumulation of knowledge and increased the availability of this knowledge; more people had access to more information.

Once the telegraph was widespread, there was no longer a way to do business without using it. Having up to the minute stock quotes changed the way businesses evaluated their holdings. Being able to communicate with various offices across the country created centralization and middle management.

One can argue that the more revolutionary an invention is, the slower the initial uptake into society, as society must do a fair amount of reorganizing to integrate the invention.

Such was the case for both the telegraph and printing press, as they allowed for things that were never before possible. Not being possible, they were rarely considered. Being rarely considered, there wasn't a large populace pining for them to happen. So when new options presented themselves, no one was rushing to embrace them, because there was no general appreciation of their potential. This is, of course, a fundamental aspect of revolutionary technology. Everyone has to figure out how (and why) to use it.

It took years for people to see advantages with the telegraph. Even after the first lines were built, and the accuracy and speed of the communications they could carry verified, Morse realized that "everybody still thought of the telegraph as a novelty, as nothing more than an amusing subject for a newspaper article, rather than the revolutionary new form of communication that he envisaged."

The new technology might confer great benefits, but it took a lot of work building the infrastructure, both physical and mental, to take any advantage of them.

The printing press faced similar challenges. In fact, books printed from Gutenberg until 1501 have their own term, incunabula, which reflects the transition from manuscript to book. Eisenstein writes: "Printers and scribes copied each other's products for several decades and duplicated the same texts for the same markets during the age of incunabula."

The momentum took a while to build. When it did, the changes were remarkable.

Q.1

The telegraph has been termed revolutionary for which one of the following reasons?

-
- 1 ☐ Before the telegraph came into being, people did not consider the possibility of something like it.
 - 2 ☐ The telegraph enabled quicker sharing of gathered knowledge.
 - 3 ☐ The telegraph helped in duplication of accumulated knowledge.
-

4 ● The telegraph helped in quickening business transactions.



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Q.2

Henry Ford’s statement goes to show that:

-
- 1 ☐ people are obsessed with speed.
-
- 2 ☐ cars faced a lot of backlash when they were first introduced.
-
- 3 ☐ people seldom think beyond existing structures or entities.
-
- 4 ☐ inventions are revolutionary as long as they are envisioned and accepted by people.
-

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Q.3

The telegraph and the printing press have been likened to the internet because:

- 1 ☐ they have helped liberate societies which had been suppressed by rulers.
- 2 ☐ they changed the basic structure of society.
- 3 ☐ they ushered in a revolutionary knowledge.
- 4 ☐ they helped people fight repressive thinking within societies.



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Q.4

Which of the following is true about fundamental changes?

- 1 ☐ They make an impact on the society by reshaping it.
- 2 ☐ They alter society by imposing the present on the interpretation of the past.
- 3 ☐ They shroud the truth about the society by making it impossible to be neutral about the past.
- 4 ☐ They are the inevitable consequences of any new technology.

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Q.5

The example of incunabula is used to show:

-
- 1 ☐ the malpractices rampant during the early days of printing.
-
- 2 ☐ how copying is key to sharing knowledge.
-
- 3 ☐ how manuscripts were used before the advent of the press.
-
- 4 ☐ the evolution and spreading of technology.
-

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Q.6

The main conclusion that can be drawn from the passage is that:

1 ☐ revolution is the only way through which society can be bettered.

2 ☐ benefits of radical changes take time to bear fruit.

3 ☐ technology is revolution as long as it is accessible.

4 ☐ general population is unwilling to accept changes.



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The emergence of anthropology as a distinct discipline occurred only recently in nineteenth century. Sydney Slotkin in his book 'Readings in early Anthropology' traced the history of many anthropological sub-disciplines from seventeenth and eighteenth century. But he also agreed that the real professional interest of the subject did not appear until nineteenth century.

The unusual peoples and their unknown way of life evoked interest of navigators and other explorers. As a result in 1800 a society named as 'Observers of Man' was founded in Paris by the union of naturalists and medical-men. This society promoted the study of natural history by providing guidance to the travelers and explorers of far places. But meanwhile, for the long series of Napoleonic wars, the commerce and the foreign travel were interrupted. Naturally the study of natural history was neglected and instead, the questions of philosophy, ethnology and politics came forward. The society could not stand long and in 1838 another society for the protection of aborigines was established in London. Eminent scholars joined in that society whose aim was political and social, rather than scientific. Again, within a very short period need of a scientific society was realized. One of the influential members, Mr.Hodgkin in collaboration with several other distinguished persons, in 1839 inaugurated an 'Ethnological Society' in Berlin. Eminent naturalist Milne-Edwards took there an active part. In 1841, a similar type of society was formed in London and soon after that in 1842 the third 'Ethnological Society' was founded in New York. The establishment of ethnological societies can be taken as an important landmark in the emergence of anthropology.

Anthropology is therefore considered as the product of scientific developments in western world. The tradition of social philosophies continued till the advent of industrialization in west and it emerged as a distinct discipline in the nineteenth century; Charles Darwin's Origin of Species (1859) perhaps boosted the zeal of all scientists in different fields. Darwin showed that life had evolved from the unicellular organism and went to the way of complex multicellular organism, through the process of evolution. This idea not only opened the new avenues for zoology, anatomy, physiology, philology, palaeontology, archaeology and geology; it also accelerated the pace of socio-cultural studies. Being influenced by Darwin, a group of intellectual namely Spencer, Morgan, Tylor reached to the conclusion that evolution did not operate only in case of physical aspect of mankind, but also in cultural life. Accordingly, the year 1859 may be taken as the date of birth of anthropology; R.R. Marret (1912) termed anthropology as 'child of Darwin'. In the same year 1859, Paul Broca founded an 'Anthropological Society' in Paris. Broca himself was an anatomist and human biologist. He advocated the idea of general biology by synthesizing all specialized studies in order to understand a man. Anthropology made a significant progress in America following Broca's light.

In 1863, James Hunt established an Anthropological Society in London. Hunt declared anthropology as "a whole science of man". In 1863, Thomas Huxley was elected the president of the anthropological society. He belonged to the Ethnological society in London for a considerable span of time. From that time onwards, the work of Ethnological society and the Anthropological society merged together.

Q.7

In paragraph 2, why does the author talk about 'ethnological societies'?

1 ☐ To show that the absence of ethnological societies would have inhibited the development of anthropology

2 ☐ To show that without these societies, classifying human races and studying their physical characteristics would have been close to impossible

3 ☐ To show that the study of natural history had often been side lined for the development of ethnology

4 ☐ To show that anthropology may have remained subservient without the existence of these societies

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Q.8


Which of the following statements best captures the thematic highlight of the passage?

-
- 1 ☐ Man and his surroundings have been a perennial source of wonder for navigators and explorers.
-
- 2 ☐ During different periods of time, different societies were formed for the benefit of man.
-
- 3 ☐ The study of natural man and creation of different societies led to the birth of anthropology.
-

4 ☐ Anthropology developed while gathering detailed information about human nature and human surrounding.

FeedBack

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Q.9

According to the passage:

-
- 1 ☐ by 1830's, Anthropology had earned a great professional interest.
-
- 2 ☐ by 1850's, Anthropology had cemented its position as a discipline.
-
- 3 ☐ by 1860, Anthropological and ethnological societies had combined.
-

4 ☐ by 1860, formation of anthropological societies had started.



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The unusual peoples and their unknown way of life evoked interest of navigators and other explorers. As a result in 1800 a society named as 'Observers of Man' was founded in Paris by the union of naturalists and medical-men. This society promoted the study of natural history by providing guidance to the travelers and explorers of far places. But meanwhile, for the long series of Napoleonic wars, the commerce and the foreign travel were interrupted. Naturally the study of natural history was neglected and instead, the questions of philosophy, ethnology and politics came forward. The society could not stand long and in 1838 another society for the protection of aborigines was established in London. Eminent scholars joined in that society whose aim was political and social, rather than scientific. Again, within a very short period need of a scientific society was realized. One of the influential members, Mr.Hodgkin in collaboration with several other distinguished persons, in 1839 inaugurated an 'Ethnological Society' in Berlin. Eminent naturalist Milne-Edwards took there an active part. In 1841, a similar type of society was formed in London and soon after that in 1842 the third 'Ethnological Society' was founded in New York. The establishment of ethnological societies can be taken as an important landmark in the emergence of anthropology.

Anthropology is therefore considered as the product of scientific developments in western world. The tradition of social philosophies continued till the advent of industrialization in west and it emerged as a distinct discipline in the nineteenth century; Charles Darwin's Origin of Species (1859) perhaps boosted the zeal of all scientists in different fields. Darwin showed that life had evolved from the unicellular organism and went to the way of complex multicellular organism, through the process of evolution. This idea not only opened the new avenues for zoology, anatomy, physiology, philology, palaeontology, archaeology and geology; it also accelerated the pace of socio-cultural studies. Being influenced by Darwin, a group of intellectual namely Spencer, Morgan, Tylor reached to the conclusion that evolution did not operate only in case of physical aspect of mankind, but also in cultural life. Accordingly, the year 1859 may be taken as the date of birth of anthropology; R.R. Marret (1912) termed anthropology as 'child of Darwin'. In the same year 1859, Paul Broca founded an 'Anthropological Society' in Paris. Broca himself was an anatomist and human biologist. He advocated the idea of general biology by synthesizing all specialized studies in order to understand a man. Anthropology made a significant progress in America following Broca's light.

In 1863, James Hunt established an Anthropological Society in London. Hunt declared anthropology as "a whole science of man". In 1863, Thomas Huxley was elected the president of the anthropological society. He belonged to the Ethnological society in London for a considerable span of time. From that time onwards, the work of Ethnological society and the Anthropological society merged together.

Q.10

All of the following are true according to the passage EXCEPT:

-
- 1 ☐ The emergence of anthropology is a result of scientific developments in western world.
-
- 2 ☐ Wars and political turmoil sometimes impacted the study of natural history.
-
- 3 ☐ Darwin's revelations about complex multicellular organisms revolutionized socio-cultural events.
-

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Q.11

Which of the following can be definitely inferred from the passage?

1 ☐ **James Hunt and Thomas Huxley would have found some common ground to discuss on Anthropology.**

2 ☐ **Darwin, with his theory on multicellular organisms, motivated all the major theories of different fields of science.**

3 ☐ **'Observers of Man' was the result of the lofty ambitions of navigators and other explorers to tame unusual peoples.**

4 ☐ **Paul Broca was a colleague of R.R. Marret.**

FeedBack

 **Bookmark**

 **Answer key/Solution**

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Q.12

The passage mentions that Darwin influenced at least three scientists with his theory. Which of the following is logically similar to this?

1 ☐ Plato talked about the existence of an ideal land called Utopia. His student Aristotle disputed this by citing that there is no external existence of Utopia.

2 ☐ Gandhi followed the path of non-violence. Bose agreed with him but didn't practice non-violence himself.

3 ☐ Sampras, a tennis champion, motivated Nadal, a young amateur tennis player, to change his playing style by adapting the former's more aggressive approach.

4 ☐ Obama, a successful politician, influenced Cortezia, a young lady from New York, to break away from her regular job and become a social worker.

FeedBack

Bookmark

Answer key/Solution

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With a day-side temperature peaking at 4,600 Kelvin (more than 7,800 degrees Fahrenheit), the newly discovered exoplanet, designated KELT-9b, is hotter than most stars and only 1,200 Kelvin (about 2,000 degrees Fahrenheit) cooler than our own sun. In fact, the ultraviolet radiation from the star it orbits is so brutal that the planet may be literally evaporating away under the intense glare, producing a glowing gas tail.

The super-heated planet has other unusual features as well. For instance, it's a gas giant 2.8 times more massive than Jupiter but only half as dense, because the extreme radiation from its host star has caused its atmosphere to puff up like a balloon. Because it is tidally locked to its star—as the moon is to Earth—the day side of the planet is perpetually bombarded by stellar radiation and, as a result, it is so hot that molecules such as water, carbon dioxide and methane can't form there. It's a planet by any of the typical definitions based on mass, but its atmosphere is almost certainly unlike any other planet we've ever seen just because of the temperature of its day side.

The reason the exoplanet is so hot is because the star it orbits is more than twice as large and nearly twice as hot as our sun. KELT-9 radiates so much ultraviolet radiation that it may completely evaporate the planet. Or, if gas giant planets like KELT-9b possess solid rocky cores as some theories suggest, the planet may be boiled down to a barren rock, like Mercury.

On the other hand, the planet's orbit is extremely close to the star so if the star begins to expand it will engulf it. "KELT-9 will swell to become a red giant star in about a billion years," said Stassun. "The long-term prospects for life, or real estate for that matter, on KELT-9b are not looking good."

"We were pretty lucky to catch the planet while its orbit transits the face of the star," said co-author Karen Collins, a post-doctoral fellow at Vanderbilt. "Because of its extremely short period, near-polar orbit and the fact that its host star is oblate, rather than spherical, we calculate that orbital precession will carry the planet out of view in about 150 years, and it won't reappear for roughly three and a half millennia."

In 2014 astronomers spotted the exoplanet using one of two telescopes specially designed to detect

planets orbiting bright stars—one in the northern and one in the southern hemisphere—jointly operated by Ohio State, Vanderbilt and Lehigh universities. The instruments, “Kilodegree Extremely Little Telescopes” or KELTs, fill a large gap in the available technologies for finding extrasolar planets. They use mostly off-the-shelf technology to provide a low-cost means of planet hunting. Whereas a traditional astronomical telescope costs millions of dollars to build, the hardware for a KELT telescope runs less than \$75,000. Where other telescopes are designed to look at very faint stars in small sections of the sky at very high resolution, KELTs look at millions of very bright stars at once, over broad sections of sky, at relatively low resolution.

Using the KELT-North telescope at Winer Observatory in Arizona, the astronomers noticed a tiny drop in the star’s brightness—only about half of one percent—which indicated that a planet may have passed in front of it. The brightness dipped once every 1.5 days, which means the planet completes a “yearly” circuit around its star every 1.5 days. Subsequent observations confirmed that the signal was caused by a transiting planet and revealed that it was what astronomers call a “hot Jupiter”—an ideal kind of planet for the KELT telescopes to spot.

The astronomers hope to take a closer look at KELT-9b with other telescopes—including Spitzer, the Hubble Space Telescope (HST) and eventually the James Webb Space Telescope after it launches in 2018. Observations with HST would enable them to see if the planet really does have a cometary tail and allow them to estimate how much longer the planet will survive its current hellish condition.

Q.13

Which of the following is not a feature of KELT-9 ?

-
- 1 ☐ It has a puffed up atmosphere.
-
- 2 ☐ It is hotter than the Sun.
-
- 3 ☐ It is oblate in shape.
-
- 4 ☐ It will become a red giant star in 1 billion years from now.
-

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Q.14

Which of the following statements is true according to the passage?

1 ☐ KELT-9 is smaller and hotter than our Sun.

2 ☐ KELTs were operated and developed by the Ohio state University.

3 ☐ No life is possible on KELT-9b.

4 ☐ KELT-9 completes a yearly circuit around its star every 1.5 days.



FeedBack

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Q.15

Which of the following is an advantage of KELT microscope?

- 1 ☐ It can spot all the extrasolar planets.
- 2 ☐ It can look at very bright stars at once, at a relatively low resolution.
- 3 ☐ It is a low cost means of planet hunting that employs out of use technology.
- 4 ☐ It was developed by the Natural science foundation.



FeedBack

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🔍 Answer key/Solution

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Q.16

What is the reason given for the assertion that the exoplanet will cease to exist after a billion years?

-
- 1 ☐ It is emitting ultraviolet radiation at a very fast pace, so it will evaporate.
-
- 2 ☐ Its host star is twice as large and twice as hot as the sun.
-
- 3 ☐ It has a nearly polar orbit and a very short orbital time so it will complete its shelf life.
-
- 4 ☐ Its orbit is very close to the star and the star will expand and swallow it.
-



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

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Using the KELT-North telescope at Winer Observatory in Arizona, the astronomers noticed a tiny drop in the star's brightness—only about half of one percent—which indicated that a planet may have passed in front of it. The brightness dipped once every 1.5 days, which means the planet completes a "yearly" circuit around its star every 1.5 days. Subsequent observations confirmed that the signal was caused by a transiting planet and revealed that it was what astronomers call a "hot Jupiter"—an ideal kind of planet for the KELT telescopes to spot.

The astronomers hope to take a closer look at KELT-9b with other telescopes—including Spitzer, the Hubble Space Telescope (HST) and eventually the James Webb Space Telescope after it launches in 2018. Observations with HST would enable them to see if the planet really does have a cometary tail and allow them to estimate how much longer the planet will survive its current hellish condition.

Q.17

All of the following are not true according to the passage except:

- 1 ☐ The constellation Cygnus is at least 650 light years away from Earth.
- 2 ☐ Karen Collins attributes luck as the most significant force behind the development of the KELTs.
- 3 ☐ The hardware of a KELT telescope is relatively cost effective.
- 4 ☐ Ultraviolet rays will completely swallow KELT9.

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FeedBack

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🔍 Answer key/Solution

Directions for questions (13 to18): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

Imagine a planet like Jupiter zipping around its host star every day and a half, superheated to temperatures hotter than most stars and sporting a giant, glowing gas tail like a comet. That's what astronomers think they have found orbiting a massive star they have labeled KELT-9, located 650 light

years from Earth in the constellation Cygnus.

With a day-side temperature peaking at 4,600 Kelvin (more than 7,800 degrees Fahrenheit), the newly discovered exoplanet, designated KELT-9b, is hotter than most stars and only 1,200 Kelvin (about 2,000 degrees Fahrenheit) cooler than our own sun. In fact, the ultraviolet radiation from the star it orbits is so brutal that the planet may be literally evaporating away under the intense glare, producing a glowing gas tail.

The super-heated planet has other unusual features as well. For instance, it's a gas giant 2.8 times more massive than Jupiter but only half as dense, because the extreme radiation from its host star has caused its atmosphere to puff up like a balloon. Because it is tidally locked to its star—as the moon is to Earth—the day side of the planet is perpetually bombarded by stellar radiation and, as a result, it is so hot that molecules such as water, carbon dioxide and methane can't form there. It's a planet by any of the typical definitions based on mass, but its atmosphere is almost certainly unlike any other planet we've ever seen just because of the temperature of its day side.

The reason the exoplanet is so hot is because the star it orbits is more than twice as large and nearly twice as hot as our sun. KELT-9 radiates so much ultraviolet radiation that it may completely evaporate the planet. Or, if gas giant planets like KELT-9b possess solid rocky cores as some theories suggest, the planet may be boiled down to a barren rock, like Mercury.

On the other hand, the planet's orbit is extremely close to the star so if the star begins to expand it will engulf it. "KELT-9 will swell to become a red giant star in about a billion years," said Stassun. "The long-term prospects for life, or real estate for that matter, on KELT-9b are not looking good."

"We were pretty lucky to catch the planet while its orbit transits the face of the star," said co-author Karen Collins, a post-doctoral fellow at Vanderbilt. "Because of its extremely short period, near-polar orbit and the fact that its host star is oblate, rather than spherical, we calculate that orbital precession will carry the planet out of view in about 150 years, and it won't reappear for roughly three and a half millennia."

In 2014 astronomers spotted the exoplanet using one of two telescopes specially designed to detect planets orbiting bright stars—one in the northern and one in the southern hemisphere—jointly operated by Ohio State, Vanderbilt and Lehigh universities. The instruments, "Kilodegree Extremely Little Telescopes" or KELTs, fill a large gap in the available technologies for finding extrasolar planets. They use mostly off-the-shelf technology to provide a low-cost means of planet hunting. Whereas a traditional astronomical telescope costs millions of dollars to build, the hardware for a KELT telescope runs less than \$75,000. Where other telescopes are designed to look at very faint stars in small sections of the sky at very high resolution, KELTs look at millions of very bright stars at once, over broad sections of sky, at relatively low resolution.

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Q.18

Why is the atmosphere of the exoplanet puffed like a balloon?

- 1 ☐ As it is hotter than the Sun
-
- 2 ☐ As it is tidily locked to its host star
-
- 3 ☐ As its host star emits ultraviolet radiation
-
- 4 ☐ As its host star is twice as hot and twice as large as the Sun
-



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Directions for questions (19 to 21): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

Vikings are also called Norseman or Northman member of the Scandinavia seafaring warriors who raided and colonized wide areas of Europe from the 9th to the 11th century and whose disruptive influence profoundly affected European history. These pagan Danish, Norwegian, and Swedish warriors were probably prompted to undertake their raids by a combination of factors ranging from overpopulation at home to the relative helplessness of victims abroad.

The Vikings were made up of landowning chieftains and clan heads, their retainers, freemen, and any energetic young clan members who sought adventure and bounty overseas. At home these Scandinavians were independent farmers, but at sea they were raiders and pillagers. During the Viking period the Scandinavian countries seem to have possessed a practically inexhaustible surplus of manpower, and leaders of ability, who could organize groups of warriors into conquering bands and armies, were seldom lacking. These bands would negotiate the seas in their longships and mount hit-and-run raids at cities and towns along the coasts of Europe. Their burning, plundering, and killing earned them the name *vikingr*, meaning "pirate" in the early Scandinavian languages.

The exact ethnic composition of the Viking armies is unknown in particular cases, but the Vikings' expansion in the Baltic lands and in Russia can reasonably be attributed to the Swedes. Elsewhere, the nonmilitary colonization of the Orkney Islands, the Faroe Islands, and Iceland was clearly accomplished by the Norwegians.

Q.19

Which of the following is not shown as a reason behind the raids and colonization by the Vikings?

- 1 ☐ Superior leadership ability of the raiders
-
- 2 ☐ Overpopulation at home
-

3 ☐ The helplessness of their victims

4 ☐ Their legacy as pirates



FeedBack

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🔍 Answer key/Solution

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Q.20

Which of the following earned them the name Viking?

1 ☐ They colonized the entire north Europe by 11th century.

2 ☐ Their nature of colonizing other countries

3 ☐ They attacked via the seas which earned them the title Viking which means pirate.

4 ☐ The imperialist policies of their leaders



FeedBack

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🔍 Answer key/Solution

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Q.21

The primary intention of the author behind this passage is to:

- 1 ☐ showcase the origin of the Vikings.
- 2 ☐ showcase the manpower these Vikings had.
- 3 ☐ showcase the Vikings' practice of colonization.
- 4 ☐ showcase their imperialist policies and the history of their colonization.

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FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Directions for questions (22 to24): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

All kinds of unlikely people have declared themselves communists. When I worked at Marxism Today, posh old ladies would come in to dust the bust of Lenin in the basement. At that point, we all loved Gramsci and Red Bologna, where the Italian Communist party held power: the fun kind of communism, not the “tankie” Stalinist kind. Bologna struggled, as theorist Franco Berardi told us, because workers were pitted against what he called “precarious, underpaid young proletarians”. Ring any bells? They did not believe that any party could lead to communism. They wanted to rebuild society with no limitations; they were the Autonomia activists. This idea of cities breathing fire, of socialism in one country: all this was exciting, and like today’s young self-declared communists who fetishize automation as the ultimate liberation. “It’s about the desire to see the coercive structures of state dismantled, while also having fun,” says Sarkar.

But the glossing-over of what communism is, of who it killed and seeing that as a moral equivalence with the deaths caused by capitalism, is idiotic ahistoricism. The idea of talking about communism with no centralised state is just that: an idea. The refusal of parts of the left to criticise Putin, or see the misery of Cuban peasants, Chinese workers, or those starving in Venezuela is sickening. The really great stuff being discussed by young leftists is not communism, it is anarcho-syndicalism – participatory local democracy. Corbyn is an unlikely step on the way to these localised utopias. For if there is any group of people that doesn’t allow freethinking, it is some of his followers, who see any micro-aggression against the great leader as punishable by death. Or worse if you are on Twitter.

If you want to be a proper communist you need to understand ideology, and this is currently a big failing. Your case has to connect to freedom. Still the right lays claim to this. Freedom for the many, not the few, yes ... but each of us has also to be free. When communism connotes liberty, I will sign up. But as long as it is associated only with obedience, I literally won’t be buying the T-shirt. This fun kind of communism is a lovely commodity indeed. All I see is people saying: “Get with the project or you are persona non grata.” Same as it ever was. Comrades: at least read your own history.

Q.22

What does the author imply through the opening sentence?

- 1 ☐ Communism is viewed as a classic construct.
- 2 ☐ Communism attracts conflicted viewpoints
- 3 ☐ Communism hovers between being a brand and an ideology.
- 4 ☐ Communism is yet to systematise its presence among the mass.

FeedBack

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Answer key/Solution

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Q.23

What is the central point of the second last paragraph?

- 1 ☐ The issues with Communism will get resolved only through the introduction of young bloods.
- 2 ☐ Communism can be effective locally.
- 3 ☐ Communism is full of unpalatable realities which get overshadowed by Utopian dreams.
- 4 ☐ In order to be successfully implemented, Communists need to first focus of micro issues.

FeedBack

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Answer key/Solution

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Q.24

The author mentions the issue of ‘obedience’ in the final paragraph because:

- 1 ☐ communism is a disease.
- 2 ☐ historically communism has been authoritarian.
- 3 ☐ party workers often misunderstand the concept of liberty.
- 4 ☐ it can be forced on people.

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FeedBack

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🔍 Answer key/Solution

Directions for question 25: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Q.25

Altruism is, by far, the most prevalent form of prosocial behavior in social psychological work. While muddled in literature and research, at basis, an altruistic act is an intentional act that helps another with no benefit, and perhaps even a cost, to the one who performs it. While inherent in most definitions of altruism is the tenet that the helper must not benefit from the altruistic act, helping lacks a similar precondition. Helping is any act that one does to assist another, regardless of whether the helper benefits from the act or not. To illustrate, if one accepts the previous definitions, he or she might think of making a charitable donation as an altruistic act, which it is if there is no benefit to the giver. However, if one donates to charity and gets a tax deduction or a public note of recognition in return, such acts might be conceived of as helping behaviors rather than altruistic ones.

1. Between the two prosocial categories, altruism and helping, all successful attempts at altruism might be considered helping, while all successful acts of helping are not altruistic.
 2. The two prosocial categories, altruism and helping, though often confused, are slightly different if the idea of personal benefit is considered.
 3. The two prosocial categories, altruism and helping, are closely related as they are both connected to selfless helping of others.
 4. The two prosocial categories, altruism and helping, are two different sets having different agendas and personal motivations.
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FeedBack

🔖 Bookmark

🔑 Answer key/Solution

Directions for question 26: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Q.26

Long before the human spirit awoke to clear cognizance of the world and itself, it sometimes stirred in its sleep, opened bewildered eyes, and slept again. One of these moments of precocious experience embraces the whole struggle of the First Men from savagery toward civilization. Within that moment, you stand almost in the very instant when the species attains its zenith. Scarcely at all beyond your own day is this early culture to be seen progressing, and already in your time the mentality of the race shows signs of decline.

1. Men's struggle from savagery to civilization, which currently displays signs of decline, is captured in a moment of precocious experience.
2. Men's development from savagery to civilization, which currently displays signs of decline, has been one of continuous struggle.
3. Men's development from savagery to civilization lies between his becoming inactive, when he goes to sleep and his time of activity.
4. Men's development from savagery to civilization is embraced at the moment in which man attains zenith and realizes that our race has deteriorated.



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Directions for question 27: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Q.27

The emotional climate of the home directly influences the person's characteristics pattern of behavior and his characteristics adjustment to life. If the home climate is favorable, the individual will react to personal problems and frustrations in a calm, philosophical manner and to people in a tolerant, cheerful and cooperative way. If the home climate is frictional, he will develop the habit of reacting to family members and outsiders as well in a hostile or antagonistic way. For instance if a child perceives his mother showing favoritism toward a sibling, he develops an attitude of resentment toward people in positions of authority.

1. The home climate influences the person by the effect it has on his attitudes towards people.
2. The home climate probably outweighs the effects of all other environmental impacts.
3. The home climate fostered by families influences the personality pattern of an individual.
4. A positive home climate makes a person's behavior healthy towards the people outside.



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.28

Directions for question 28: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. The ideology of male domination, earlier too, prompted men to resist women in their occupations even when they had no anxieties about their economic self-interests.
2. The prevalent beliefs that women should be subordinate and domestic made men unlikely to find women's entry into their occupation pleasant or desirable.
3. It would violate their expectations about commendable female behavior, and raise questions about their distinctively masculine identity.
4. With both self interest and bigotry stoking the fires of men's opposition to women in their trades, it's not surprising that they stayed hot so long.
5. Sharing their jobs with women would rupture the web of men's work culture.

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FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.29

Directions for question 29: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. The crisis was also responsible for widespread unemployment and underemployment of skilled and unskilled workers around the world.
2. It is estimated by many leading economists that if the financial regulatory systems are not tightened, global recessions can be expected periodically.
3. Some of the terrible effects of the crisis were widespread evictions, foreclosures, global stock market collapses, failure of key businesses, economic activity downturn, global recession and European sovereign debt crises.
4. It was entirely avoidable and was caused mainly due to the failure of financial regulators, undisclosed conflicts of interest, risky investments, excessive lending and borrowing, failure of the credit rating agencies and poor corporate governance.
5. The global financial crisis of 2008 is a classic example of human greed, self-indulgence and selfishness.

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FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.30

Directions for question 30: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. He started each company with an idea on how to improve the world and Space Exploration Technologies Corporation is Musk's company to make space travel cheaper and to push space exploration forward.
2. One person who noticed, and asked why, is Elon Musk.
3. Since 1972 when the last Apollo mission landed on the moon, no one has been to the moon, or even out of Low Earth Orbit.
4. He founded many companies, including Zip2, Paypal, Tesla Motors, SpaceX, and SolarCity, quickly becoming a multimillionaire.
5. He looked into why and found that the main reason space exploration slowed almost to a stop was cost.

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FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.31

Directions for question 31: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. In the latest report, The International Labour Organisation (ILO) said that India could witness a higher unemployment rate of 3.5 per cent in 2018, a little more than the 3.4 per cent projected earlier.
2. The study further highlighted that the number of jobless in the country will increase to 18.6 million in 2018 and 18.9 million in 2019, against 18.3 million in 2017.
3. Taking a note of this severe situation, a lot of Indian as well as international companies have tapped on the opportunities to create skilled workforce.
4. Looking at the current job market, the comprehensible fact is that many people with serious academic degrees are not being able to find a satisfactory job, which is giving a stagnant rise to the underemployment.
5. According to NITI Aayog, the rate of underemployment is more than unemployment in the nation which is plaguing the country's economy largely.



FeedBack

 Bookmark

 Answer key/Solution

Q.32

Directions for question 32: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

- 1. The finding, published on Tuesday in the journal Nature Communications, was made by a team of international researchers who spent 22 years studying data on the reproductive strategy and survival of Scandinavian brown bears.**
 - 2. Female brown bears have learned to protect themselves from being shot by spending more time caring for their young as they adapt to legislation banning the hunting of mothers with cubs.**
 - 3. "Man is now an evolutionary force in the lives of the bears," said Professor Jon Swenson from the Norwegian University of Life Sciences (NMBU).**
 - 4. In Sweden, Scandinavian brown bears – Ursus arctos – are heavily hunted and anyone can hunt without having a specific licence, but bears in family groups are protected by law.**
 - 5. Even a few years back the hunting habit of these bear families did not face any impediment from the new settlers.**
-



FeedBack

 Bookmark

 Answer key/Solution

Q.33

Directions for question 33: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. The Parisian terror attacks managed it, partly because the horror of it all warranted such blanket coverage, but also because the resulting conversation about freedom of speech.
 2. There hasn't been this much furious debate about the merits of a cartoon since the introduction of Scrappy Doo.
 3. Still, depressing though January's headlines have been, if you delve a little further and uncover some of the lesser-reported stories, you'll discover to your boundless delight that they are profoundly depressing too.
 4. January is traditionally a fairly sleepy month, current affairs-wise, but a horrified gawp at the news confirms that 2015 has already had one heck of a morning.
 5. For instance, take the story about German AI researchers creating a version of Super Mario World starring a self-aware version of Mario, who is psychologically affected by the experience of the game.
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FeedBack

🔖 Bookmark

🔑 Answer key/Solution

Q.34

Directions for question 34: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. Rudolf Schönegger, 55, swapped a signed version of Harry Potter and the Goblet of Fire worth £1,675 with a copy of Late Call, by Angus Wilson, at Hatchards in Piccadilly on New Year's Eve.
 2. The novel has generated much fanfare ever since it was put up at the auction.
 3. The novel had been on display with a sticker stating its value.
 4. An Italian bookseller has been convicted of stealing a first edition Harry Potter book, signed by J K Rowling, by switching it with a different novel in a shop in central London.
 5. CCTV footage showed him browsing in the bookshop before removing the rare Harry Potter novel from its shelf behind the till while a staff member had her back turned, and replacing it with the Wilson book moments later.
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FeedBack

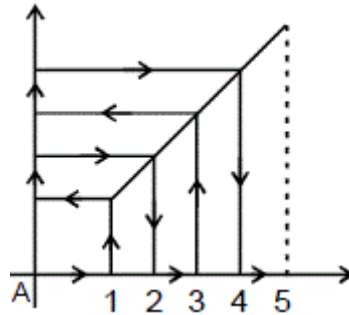
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🔑 Answer key/Solution

Sec 2

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

A drunk man was sitting at the centre of a coordinate plane i.e. at $(0,0)$. He started moving from there with a speed of 1 unit/ minute but was partially in a subconscious mind and hence moving in an unconventional way following a random path. But while his family tried to trace his path with the help of their dog, they found a certain pattern in the path taken by him. The pattern is as shown below, where initially the man was at $A(0,0)$ and moved along the path as given by arrows in the following figure.



Q.35

If that man's family came to know about the path followed by him after 2000 minutes of his start and wanted to know his location at that time, then what are the coordinates of the man's position at that time?

- 1 ☐ (45, 44)
- 2 ☐ (44, 24)
- 3 ☐ (45, 25)
- 4 ☐ None of these

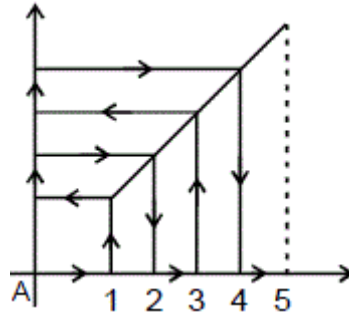
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Answer key/Solution

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

A drunk man was sitting at the centre of a coordinate plane i.e. at (0,0). He started moving from there with a speed of 1 unit/ minute but was partially in an subconscious mind and hence moving in an unconventional way following a random path. But while his family tried to trace his path with the help of their dog, they found a certain pattern in the path taken by him. The pattern is as shown below, where initially the man was at A(0,0) and moved along the path as given by arrows in the following figure.



Q.36

At which of the following time he will not be on a point on diagonal line i.e. $x = y$?

1 ☐ 110

2 ☐ 240

3 ☐ 870

4 ☐ 900

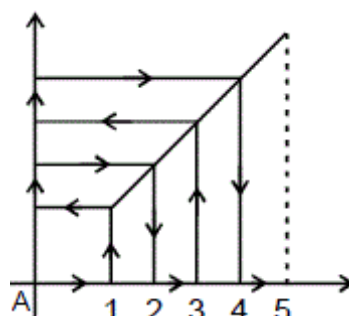
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Answer key/Solution

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

A drunk man was sitting at the centre of a coordinate plane i.e. at (0,0). He started moving from there with a speed of 1 unit/ minute but was partially in an subconscious mind and hence moving in an unconventional way following a random path. But while his family tried to trace his path with the help of their dog, they found a certain pattern in the path taken by him. The pattern is as shown below, where initially the man was at A(0,0) and moved along the path as given by arrows in the following figure.




Q.37

If his brother is sitting at (30, 30) and started moving towards him with twice the speed of the man at the same time the man started moving from (0,0), then the co-ordinates of the point at which they both will meet is, assuming both are moving on the given pattern of path.

- 1 ☐ (13, 17)
- 2 ☐ (17, 13)
- 3 ☐ (20, 12)
- 4 ☐ None of these

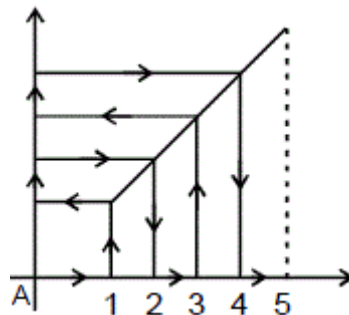
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 **Answer key/Solution**

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

A drunk man was sitting at the centre of a coordinate plane i.e. at (0,0). He started moving from there with a speed of 1 unit/ minute but was partially in an subconscious mind and hence moving in an unconventional way following a random path. But while his family tried to trace his path with the help of their dog, they found a certain pattern in the path taken by him. The pattern is as shown below, where initially the man was at A(0,0) and moved along the path as given by arrows in the following figure.



Q.38

**If his brother is sitting at (20, 40) and started moving towards him with twice the speed of the man at the same time the man started moving from (0,0), then in how much time (in minutes) will they meet?
(Assuming both are moving on the given pattern of path)**

FeedBack

 **Bookmark**

 Answer key/Solution

Directions for questions 39 to 42: Answer the questions on the basis of the information given below.

ICC Cricket World Cup 2019, a cricket tournament, is to be held in England and Wales. There will be ten teams – England, Australia, Bangladesh, India, New Zealand, Pakistan, South Africa, Sri Lanka, West Indies and Zimbabwe – contesting in the tournament. First stage of the tournament will consist of two groups – Group A and Group B – with five teams each. Each of the five teams in both the groups will play against each other within their group for once. After all these matches of first stage, top two teams i.e., winning maximum number of matches, from each group will be advanced to the second stage.

In the second stage, best team from Group A will play with second best team of Group B and best team from Group B will play with second best team of Group A. In case the top two teams of a group have equal number of winning matches in first stage, the team which would have won the match held between these top two will be declared the best team of first stage of that group. Second stage will be a knockout stage i.e. the losing team in a match is not allowed to play any further. The winners from the two matches of the second stage will then be advanced to the third and final stage. The final stage will be a knockout stage too.

Oobi-Oobi, the koala, predicted that there will be no match ending in a draw in the entire tournament. Following are his some other predictions.

- I) England will lose only to India and Australia in the first stage.
- II) India will lose only to West Indies in the first stage.
- III) In group A in first stage, two teams will win equal number of matches. Same was true for two other teams in this group. The fifth team will win different number of matches with respect to the other four teams.
- IV) All the predictions done by Oobi- Oobi were taken true, unless stated otherwise.

The journalist, who recorded the predictions, shows the tally after the first stage. He missed filling up some data under the column – Matches Won.

	Team	Matches Won
Group A	England	
	Australia	
	Bangladesh	
	India	
	West Indies	1
Group B	New Zealand	4
	Pakistan	2
	South Africa	3
	Sri Lanka	1
	Zimbabwe	0

Q.39

If Australia wins the tournament, then which of the following teams can be the other team to play in third stage?

2 ☐ India

3 ☐ Bangladesh

4 ☐ None of these

FeedBack

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🔍 Answer key/Solution

Directions for questions 39 to 42: Answer the questions on the basis of the information given below.

ICC Cricket World Cup 2019, a cricket tournament, is to be held in England and Wales. There will be ten teams – England, Australia, Bangladesh, India, New Zealand, Pakistan, South Africa, Sri Lanka, West Indies and Zimbabwe – contesting in the tournament. First stage of the tournament will consist of two groups – Group A and Group B – with five teams each. Each of the five teams in both the groups will play against each other within their group for once. After all these matches of first stage, top two teams i.e., winning maximum number of matches, from each group will be advanced to the second stage.

In the second stage, best team from Group A will play with second best team of Group B and best team from Group B will play with second best team of Group A. In case the top two teams of a group have equal number of winning matches in first stage, the team which would have won the match held between these top two will be declared the best team of first stage of that group. Second stage will be a knockout stage i.e. the losing team in a match is not allowed to play any further. The winners from the two matches of the second stage will then be advanced to the third and final stage. The final stage will be a knockout stage too.

Oobi-Ooobi, the koala, predicted that there will be no match ending in a draw in the entire tournament. Following are his some other predictions.

I) England will lose only to India and Australia in the first stage.

II) India will lose only to West Indies in the first stage.

III) In group A in first stage, two teams will win equal number of matches. Same was true for two other teams in this group. The fifth team will win different number of matches with respect to the other four teams.

IV) All the predictions done by Oobi- Ooobi were taken true, unless stated otherwise.

The journalist, who recorded the predictions, shows the tally after the first stage. He missed filling up some data under the column – Matches Won.

	Team	Matches Won
Group A	England	
	Australia	
	Bangladesh	
	India	
	West Indies	1
Group B	New Zealand	4
	Pakistan	2
	South Africa	3
	Sri Lanka	1
	Zimbabwe	0

Q.40

If only the (III) numbered prediction was partially true and rest are completely true about first stage of Group A and three teams would have won the same number of matches in this group, then which of the following teams will definitely play in second stage?

1 ☐ India

2 ☐ West Indies

3 ☐ Pakistan

4 ☐ Bangladesh

FeedBack

 Bookmark

 Answer key/Solution

Directions for questions 39 to 42: Answer the questions on the basis of the information given below.

ICC Cricket World Cup 2019, a cricket tournament, is to be held in England and Wales. There will be ten teams – England, Australia, Bangladesh, India, New Zealand, Pakistan, South Africa, Sri Lanka, West Indies and Zimbabwe – contesting in the tournament. First stage of the tournament will consist of two groups – Group A and Group B – with five teams each. Each of the five teams in both the groups will play against each other within their group for once. After all these matches of first stage, top two teams i.e., winning maximum number of matches, from each group will be advanced to the second stage.

In the second stage, best team from Group A will play with second best team of Group B and best team from Group B will play with second best team of Group A. In case the top two teams of a group have equal number of winning matches in first stage, the team which would have won the match held between these top two will be declared the best team of first stage of that group. Second stage will be a knockout stage i.e. the losing team in a match is not allowed to play any further. The winners from the two matches of the second stage will then be advanced to the third and final stage. The final stage will be a knockout stage too.

Oobi-Oobi, the koala, predicted that there will be no match ending in a draw in the entire tournament. Following are his some other predictions.

- I) England will lose only to India and Australia in the first stage.
- II) India will lose only to West Indies in the first stage.
- III) In group A in first stage, two teams will win equal number of matches. Same was true for two other teams in this group. The fifth team will win different number of matches with respect to the other four teams.
- IV) All the predictions done by Oobi- Oobi were taken true, unless stated otherwise.

The journalist, who recorded the predictions, shows the tally after the first stage. He missed filling up some data under the column – Matches Won.

	Team	Matches Won
Group A	England	
	Australia	
	Bangladesh	
	India	
	West Indies	1
Group B	New Zealand	4
	Pakistan	2
	South Africa	3
	Sri Lanka	1
	Zimbabwe	0

Q.41

New Zealand will face which team in the second stage?

2 ☐ Australia

3 ☐ Bangladesh

4 ☐ Cannot be determined

FeedBack

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🔍 Answer key/Solution

Directions for questions 39 to 42: Answer the questions on the basis of the information given below.

ICC Cricket World Cup 2019, a cricket tournament, is to be held in England and Wales. There will be ten teams – England, Australia, Bangladesh, India, New Zealand, Pakistan, South Africa, Sri Lanka, West Indies and Zimbabwe – contesting in the tournament. First stage of the tournament will consist of two groups – Group A and Group B – with five teams each. Each of the five teams in both the groups will play against each other within their group for once. After all these matches of first stage, top two teams i.e., winning maximum number of matches, from each group will be advanced to the second stage.

In the second stage, best team from Group A will play with second best team of Group B and best team from Group B will play with second best team of Group A. In case the top two teams of a group have equal number of winning matches in first stage, the team which would have won the match held between these top two will be declared the best team of first stage of that group. Second stage will be a knockout stage i.e. the losing team in a match is not allowed to play any further. The winners from the two matches of the second stage will then be advanced to the third and final stage. The final stage will be a knockout stage too.

Oobi-Ooobi, the koala, predicted that there will be no match ending in a draw in the entire tournament. Following are his some other predictions.

I) England will lose only to India and Australia in the first stage.

II) India will lose only to West Indies in the first stage.

III) In group A in first stage, two teams will win equal number of matches. Same was true for two other teams in this group. The fifth team will win different number of matches with respect to the other four teams.

IV) All the predictions done by Oobi- Ooobi were taken true, unless stated otherwise.

The journalist, who recorded the predictions, shows the tally after the first stage. He missed filling up some data under the column – Matches Won.

	Team	Matches Won
Group A	England	
	Australia	
	Bangladesh	
	India	
	West Indies	1
Group B	New Zealand	4
	Pakistan	2
	South Africa	3
	Sri Lanka	1
	Zimbabwe	0

Q.42

If South Africa wins in second stage, then maximum how many matches can India win in the entire tournament?

FeedBack

 **Bookmark**

 **Answer key/Solution**

Direction for questions 43 to 46: Answer the questions on the basis of the information given below.

There is a Query Answering Module (QAM) in which students asked their queries in the 4 subjects - Physics, Chemistry, Maths, Biology. The queries get entered in the module as soon as they are asked by any student and remain in the module until they are answered. All queries that are received in the first half of a day are counted as a part of that day and the ones received in the second half are counted as a part of the next day. There are four teachers – A, B, C, D - who are responsible for answering these queries. Queries can be answered only in the second half of a day.

The following table gives the number of unanswered queries of the previous week i.e. 18th June, 2018 to 24th June, 2018 in the 4 subjects by the end of that week.

Number of unanswered queries of the previous week			
Physics	Chemistry	Maths	Biology
24	17	48	14

The information regarding the number of new queries received in the current week i.e. 25th June, 2018 to 30th June, 2018 is given below:

	Physics	Chemistry	Maths	Biology
Monday	10	2	5	2
Tuesday	12	5	2	3
Wednesday	8	2	5	0
Thursday	4	2	8	5
Friday	2	4	3	6
Saturday	4	5	1	7

- Queries based on Biology are answered by 'C' only and also C answers queries on Biology only.
- Queries in Maths are answered by 'D' only.
- In the current week, if the number of queries answered by A, B, C and D on any day (Monday to Saturday) is denoted by p, q, r and s respectively, then
$$6 \leq p \leq 12$$
$$8 \leq q \leq 18$$
$$5 \leq r \leq 10$$
$$2 \leq s \leq 15$$
- No query is admitted or answered on Sundays.

Q.43

On which day of the current week could 'C' answer the maximum possible number of queries?

1 ☐ Wednesday

2 ☐ Friday

3 ☐ Saturday

4 ☐ Friday or Saturday

Direction for questions 43 to 46: Answer the questions on the basis of the information given below.

There is a Query Answering Module (QAM) in which students asked their queries in the 4 subjects - Physics, Chemistry, Maths, Biology. The queries get entered in the module as soon as they are asked by any student and remain in the module until they are answered. All queries that are received in the first half of a day are counted as a part of that day and the ones received in the second half are counted as a part of the next day. There are four teachers – A, B, C, D - who are responsible for answering these queries. Queries can be answered only in the second half of a day.

The following table gives the number of unanswered queries of the previous week i.e. 18th June, 2018 to 24th June, 2018 in the 4 subjects by the end of that week.

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Physics	Chemistry	Maths	Biology
24	17	48	14

The information regarding the number of new queries received in the current week i.e. 25th June, 2018 to 30th June, 2018 is given below:

	Physics	Chemistry	Maths	Biology
Monday	10	2	5	2
Tuesday	12	5	2	3
Wednesday	8	2	5	0
Thursday	4	2	8	5
Friday	2	4	3	6
Saturday	4	5	1	7

- Queries based on Biology are answered by 'C' only and also C answers queries on Biology only.
- Queries in Maths are answered by 'D' only.
- In the current week, if the number of queries answered by A, B, C and D on any day (Monday to Saturday) is denoted by p, q, r and s respectively, then

$$6 \leq p \leq 12$$

$$8 \leq q \leq 18$$

$$5 \leq r \leq 10$$

$$2 \leq s \leq 15$$

- No query is admitted or answered on Sundays.

Q.44

In the current week if there are no pending queries of Maths by the end of Saturday, then the total number of queries of Maths that were answered on the same day when they were received could not be less than

2 3

3 2

4 1

Feedback

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Answer key/Solution

Direction for questions 43 to 46: Answer the questions on the basis of the information given below.

There is a Query Answering Module (QAM) in which students asked their queries in the 4 subjects - Physics, Chemistry, Maths, Biology. The queries get entered in the module as soon as they are asked by any student and remain in the module until they are answered. All queries that are received in the first half of a day are counted as a part of that day and the ones received in the second half are counted as a part of the next day. There are four teachers – A, B, C, D - who are responsible for answering these queries. Queries can be answered only in the second half of a day.

The following table gives the number of unanswered queries of the previous week i.e. 18th June, 2018 to 24th June, 2018 in the 4 subjects by the end of that week.

Number of unanswered queries of the previous week			
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24	17	48	14

The information regarding the number of new queries received in the current week i.e. 25th June, 2018 to 30th June, 2018 is given below:

	Physics	Chemistry	Maths	Biology
Monday	10	2	5	2
Tuesday	12	5	2	3
Wednesday	8	2	5	0
Thursday	4	2	8	5
Friday	2	4	3	6
Saturday	4	5	1	7

- Queries based on Biology are answered by 'C' only and also C answers queries on Biology only.
- Queries in Maths are answered by 'D' only.
- In the current week, if the number of queries answered by A, B, C and D on any day (Monday to Saturday) is denoted by p, q, r and s respectively, then

$$6 \leq p \leq 12$$

$$8 \leq q \leq 18$$

$$5 \leq r \leq 10$$

$$2 \leq s \leq 15$$

- No query is admitted or answered on Sundays.

Q.45

If all the pending queries of the previous week could be answered by the end of the day 'X' of current week, then which of the following is not possible for 'X'?

1 ☐ **Wednesday**


2 ☐ **Thursday**

3 ☐ **Friday**

4 ☐ **Saturday**

FeedBack

 **Bookmark**

 **Answer key/Solution**

Direction for questions 43 to 46: Answer the questions on the basis of the information given below.

There is a Query Answering Module (QAM) in which students asked their queries in the 4 subjects - Physics, Chemistry, Maths, Biology. The queries get entered in the module as soon as they are asked by any student and remain in the module until they are answered. All queries that are received in the first half of a day are counted as a part of that day and the ones received in the second half are counted as a part of the next day. There are four teachers – A, B, C, D - who are responsible for answering these queries. Queries can be answered only in the second half of a day.

The following table gives the number of unanswered queries of the previous week i.e. 18th June, 2018 to 24th June, 2018 in the 4 subjects by the end of that week.

Number of unanswered queries of the previous week			
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Friday	2	4	3	6
Saturday	4	5	1	7

- Queries based on Biology are answered by 'C' only and also C answers queries on Biology only.
- Queries in Maths are answered by 'D' only.
- In the current week, if the number of queries answered by A, B, C and D on any day (Monday to Saturday) is denoted by p, q, r and s respectively, then
$$6 \leq p \leq 12$$
$$8 \leq q \leq 18$$
$$5 \leq r \leq 10$$
$$2 \leq s \leq 15$$
- No query is admitted or answered on Sundays.

Q.46

On Monday of the current week, a total of 55 queries were answered. At most how many of them could be of Maths?

1 ☐ 15

2 ☐ 10

3 ☐ 5

4 ☐ Data inconsistent

FeedBack

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🔍 Answer key/Solution

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

Shasha, a party animal, celebrated Christmas, New Year's Eve and his birthday by throwing 3 parties, one each on the 3 occasions. He invited his 5, 10 and 15 friends on Christmas party, New Year's Eve party and Birthday party respectively. All the invitees attended the party they were invited to. In each of the 3 parties, at least 30% of all the invitees were girls and at least 50% of all the invitees were boys. The menu, for each of the 3 parties, comprised of beverages and snacks. The snacks consisted of - Vegetable Burger, Chicken Burger, Slice of Vegetable Pizza and Slice of Chicken Pizza whereas the beverages consisted of Whiskey and Beer.

Following is the additional information given about the cost of the above mentioned items present in the menu:

Items	Cost (In Rs./piece)
Vegetable Burger	100
Chicken Burger	150
Slice of Vegetable Pizza	200
Slice of Chicken Pizza	250
Can of Beer	100
Peg of whiskey	150

All the 6 items were available in each of the 3 parties.

The amount of snacks and beverages a person can consume is called "the Diet of the person".

Following table gives information about the diet of invitees, based on their gender.

Invitee	Diet	
	Minimum	Maximum
A girl	(1 Burger or 1 slice of Pizza) and 1 can of Beer	(2 Burgers or 1 Burger and 1 Slice of Pizza) and 2 cans of Beer
A boy	(2 Burgers or 1 Burger and 1 slice of Pizza) and (2 cans of Beer or 3 pegs of whiskey)	(2 Burgers and 1 Slice of Pizza or 3 Burgers or 2 slices of Pizza) and (5 cans of Beer or 8 pegs of Whiskey)

Note:

1. Burger can be vegetable or Chicken. Same is true with the Slice of Pizza.
2. A person can consume any amount of beverages and snacks, ranging from minimum to maximum diet.

Total cost incurred by Shasha in throwing a party is the sum of the cost of beverages and snacks, consumed by all the invitees. (Excluding Shasha himself)

Q.47

If the combined total cost incurred by Shasha of the 3 parties taken together is the maximum possible, then what could be the maximum number of girl invitees, including all the 3 parties?

2 ☐ 10

3 ☐ 15

4 ☐ 9



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

Shasha, a party animal, celebrated Christmas, New Year's Eve and his birthday by throwing 3 parties, one each on the 3 occasions. He invited his 5, 10 and 15 friends on Christmas party, New Year's Eve party and Birthday party respectively. All the invitees attended the party they were invited to. In each of the 3 parties, at least 30% of all the invitees were girls and at least 50% of all the invitees were boys. The menu, for each of the 3 parties, comprised of beverages and snacks. The snacks consisted of - Vegetable Burger, Chicken Burger, Slice of Vegetable Pizza and Slice of Chicken Pizza whereas the beverages consisted of Whiskey and Beer.

Following is the additional information given about the cost of the above mentioned items present in the menu:

Items	Cost (In Rs./piece)
Vegetable Burger	100
Chicken Burger	150
Slice of Vegetable Pizza	200
Slice of Chicken Pizza	250
Can of Beer	100
Peg of whiskey	150

All the 6 items were available in each of the 3 parties.

The amount of snacks and beverages a person can consume is called "the Diet of the person".

Following table gives information about the diet of invitees, based on their gender.

Invitee	Diet	
	Minimum	Maximum
A girl	(1 Burger or 1 slice of Pizza) and 1 can of Beer	(2 Burgers or 1 Burger and 1 Slice of Pizza) and 2 cans of Beer
A boy	(2 Burgers or 1 Burger and 1 slice of Pizza) and (2 cans of Beer or 3 pegs of whiskey)	(2 Burgers and 1 Slice of Pizza or 3 Burgers or 2 slices of Pizza) and (5 cans of Beer or 8 pegs of Whiskey)

Note:

1. Burger can be vegetable or Chicken. Same is true with the Slice of Pizza.
2. A person can consume any amount of beverages and snacks, ranging from minimum to maximum diet.

Total cost incurred by Shasha in throwing a party is the sum of the cost of beverages and snacks, consumed by all the invitees. (Excluding Shasha himself)

Q.48

In which of the 3 parties, could the total cost incurred in the party be least as compared to the other 2 parties?

- (i) New Year's Eve party
- (ii) Birthday party
- (iii) Christmas party

1 ☐ only (iii)

2 ☐ only (i) and (iii)

3 ☐ only (i) and (ii)

4 ☐ All three

✕

FeedBack

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🔑 Answer key/Solution

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

Shasha, a party animal, celebrated Christmas, New Year's Eve and his birthday by throwing 3 parties, one each on the 3 occasions. He invited his 5, 10 and 15 friends on Christmas party, New Year's Eve party and Birthday party respectively. All the invitees attended the party they were invited to. In each of the 3 parties, at least 30% of all the invitees were girls and at least 50% of all the invitees were boys. The menu, for each of the 3 parties, comprised of beverages and snacks. The snacks consisted of - Vegetable Burger, Chicken Burger, Slice of Vegetable Pizza and Slice of Chicken Pizza whereas the beverages consisted of Whiskey and Beer.

Following is the additional information given about the cost of the above mentioned items present in the menu:

Items	Cost (In Rs./piece)
Vegetable Burger	100
Chicken Burger	150
Slice of Vegetable Pizza	200
Slice of Chicken Pizza	250
Can of Beer	100
Peg of whiskey	150

All the 6 items were available in each of the 3 parties.

The amount of snacks and beverages a person can consume is called "the Diet of the person".

Following table gives information about the diet of invitees, based on their gender.

Invitee	Diet	
	Minimum	Maximum
A girl	(1 Burger or 1 slice of Pizza) and 1 can of Beer	(2 Burgers or 1 Burger and 1 Slice of Pizza) and 2 cans of Beer
A boy	(2 Burgers or 1 Burger and 1 slice of Pizza) and (2 cans of Beer or 3 pegs of whiskey)	(2 Burgers and 1 Slice of Pizza or 3 Burgers or 2 slices of Pizza) and (5 cans of Beer or 8 pegs of Whiskey)

Note:

1. Burger can be vegetable or Chicken. Same is true with the Slice of Pizza.
2. A person can consume any amount of beverages and snacks, ranging from minimum to maximum diet.

Total cost incurred by Shasha in throwing a party is the sum of the cost of beverages and snacks, consumed by all the invitees. (Excluding Shasha himself)

Q.49

What is the maximum possible difference between the total cost incurred in his Christmas party and the total cost incurred in his Birthday party?

2 ☐ Rs. 18900

3 ☐ Rs. 6450

4 ☐ Rs. 1850



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🔍 Answer key/Solution

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

Shasha, a party animal, celebrated Christmas, New Year's Eve and his birthday by throwing 3 parties, one each on the 3 occasions. He invited his 5, 10 and 15 friends on Christmas party, New Year's Eve party and Birthday party respectively. All the invitees attended the party they were invited to. In each of the 3 parties, at least 30% of all the invitees were girls and at least 50% of all the invitees were boys. The menu, for each of the 3 parties, comprised of beverages and snacks. The snacks consisted of - Vegetable Burger, Chicken Burger, Slice of Vegetable Pizza and Slice of Chicken Pizza whereas the beverages consisted of Whiskey and Beer.

Following is the additional information given about the cost of the above mentioned items present in the menu:

Items	Cost (In Rs./piece)
Vegetable Burger	100
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Slice of Vegetable Pizza	200
Slice of Chicken Pizza	250
Can of Beer	100
Peg of whiskey	150

All the 6 items were available in each of the 3 parties.

The amount of snacks and beverages a person can consume is called "the Diet of the person".

Following table gives information about the diet of invitees, based on their gender.

Invitee	Diet	
	Minimum	Maximum
A girl	(1 Burger or 1 slice of Pizza) and 1 can of Beer	(2 Burgers or 1 Burger and 1 Slice of Pizza) and 2 cans of Beer
A boy	(2 Burgers or 1 Burger and 1 slice of Pizza) and (2 cans of Beer or 3 pegs of whiskey)	(2 Burgers and 1 Slice of Pizza or 3 Burgers or 2 slices of Pizza) and (5 cans of Beer or 8 pegs of Whiskey)

Note:

1. Burger can be vegetable or Chicken. Same is true with the Slice of Pizza.
2. A person can consume any amount of beverages and snacks, ranging from minimum to maximum diet.

Total cost incurred by Shasha in throwing a party is the sum of the cost of beverages and snacks, consumed by all the invitees. (Excluding Shasha himself)

Q.50

In New Year's Eve party, if all the invitees had the diet of their choice, then what could be the maximum number of slices of Chicken Pizza arranged by Shasha for the same?



FeedBack

🔖 Bookmark

🔑 Answer key/Solution

Directions for questions 51 to 54: Answer the questions on the basis of the information given below.

Four professors - A, B, C and D - each had to teach four different students - M, N, O and P. Each professor could teach these students for a limited time only. Also each student required only a specific hours of training under each professor.

Some data about the time spent by the professors on students is provided in the table given below. For example, 3 written in first row and first column denotes the teaching time (in hours) spent by professor A on student M. This can be denoted as MA.

		Time spent by professors				average
		A	B	C	D	
Time required by students	M	3		2		
	N	2	7		3	5
	O		6			
	P					
average		2.75	5	3.75	3.5	

- Average time spent by professors A and B on teaching M = Average time spent by professors C and D on teaching M = average time spent by all the professors on teaching M.
- Total teaching time required by M = total teaching time required by O.
- $OC \times OD \times OA = OB$
and $OC - OD = OD - OA$
and $OC > OD$
- Time spent by any professor on teaching any student is an integral multiple of hours.

Q.51

What was the total teaching time (in hours) allotted to P?



FeedBack

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Answer key/Solution

Directions for questions 51 to 54: Answer the questions on the basis of the information given below.

Four professors - A, B, C and D - each had to teach four different students - M, N, O and P. Each professor could teach these students for a limited time only. Also each student required only a specific hours of training under each professor.

Some data about the time spent by the professors on students is provided in the table given below. For example, 3 written in first row and first column denotes the teaching time (in hours) spent by professor A on student M. This can be denoted as MA.

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	O		6			
	P					
average		2.75	5	3.75	3.5	

- Average time spent by professors A and B on teaching M = Average time spent by professors C and D on teaching M = average time spent by all the professors on teaching M.
- Total teaching time required by M = total teaching time required by O.
- $OC \times OD \times OA = OB$
and $OC - OD = OD - OA$
and $OC > OD$
- Time spent by any professor on teaching any student is an integral multiple of hours.

Q.52

Which student had the lowest total training time?

1 ☐ M and N

2 ☐ N and O

3 ☐ O and M

4 ☐ P and N



FeedBack

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Answer key/Solution

Directions for questions 51 to 54: Answer the questions on the basis of the information given below.

Four professors - A, B, C and D - each had to teach four different students - M, N, O and P. Each professor could teach these students for a limited time only. Also each student required only a specific hours of training under each professor.

Some data about the time spent by the professors on students is provided in the table given below. For example, 3 written in first row and first column denotes the teaching time (in hours) spent by professor A on student M. This can be denoted as MA.

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	P					
average		2.75	5	3.75	3.5	

- Average time spent by professors A and B on teaching M = Average time spent by professors C and D on teaching M = average time spent by all the professors on teaching M.
- Total teaching time required by M = total teaching time required by O.
- $OC \times OD \times OA = OB$
and $OC - OD = OD - OA$
and $OC > OD$
- Time spent by any professor on teaching any student is an integral multiple of hours.

Q.53

How many hours did professor A spend on teaching P?



FeedBack

Bookmark

Answer key/Solution

Directions for questions 51 to 54: Answer the questions on the basis of the information given below.

Four professors - A, B, C and D - each had to teach four different students - M, N, O and P. Each professor could teach these students for a limited time only. Also each student required only a specific hours of training under each professor.

Some data about the time spent by the professors on students is provided in the table given below. For example, 3 written in first row and first column denotes the teaching time (in hours) spent by professor A on student M. This can be denoted as MA.

		Time spent by professors				average
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	P					
average		2.75	5	3.75	3.5	

- Average time spent by professors A and B on teaching M = Average time spent by professors C and D on teaching M = average time spent by all the professors on teaching M.
- Total teaching time required by M = total teaching time required by O.
- $OC \times OD \times OA = OB$
and $OC - OD = OD - OA$
and $OC > OD$
- Time spent by any professor on teaching any student is an integral multiple of hours.

Q.54

Which student was allotted the highest training time by professor C?

1 ☐ M

2 ☐ N

3 ☐ O

4 ☐ P



Feedback

 Bookmark

 Answer key/Solution

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

There are seven employees namely - Shalabh, Parag, Shalini, Neha, Raj, Vishal and Richa - in a company. Each of them has their weekly-offs on one of the dates - 5th, 9th, 11th, 13th, 17th, 28th and 31st - in month of July, not necessarily in the same order. Some more information is also available, which is as follows:

1. Dates of weekly-off of Shalabh, Parag and Raj are in A.P.
2. Dates of weekly-off of Shalini, Parag and Neha also form an A.P.
3. Weekly-off of Shalabh, Parag and Raj fall in the same week.
4. Weekly-off of Shalini and Vishal fall on a same week day.
5. Sunday is an official holiday in the company. None of the aforementioned dates falls on Sunday.

Q.55

Weekly-off of Neha falls on

1 ☐ Wednesday

2 ☐ Thursday

3 ☐ Monday

4 ☐ Friday



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

There are seven employees namely - Shalabh, Parag, Shalini, Neha, Raj, Vishal and Richa - in a company. Each of them has their weekly-offs on one of the dates - 5th, 9th, 11th, 13th, 17th, 28th and 31st - in month of July, not necessarily in the same order. Some more information is also available, which is as follows:

1. Dates of weekly-off of Shalabh, Parag and Raj are in A.P.
2. Dates of weekly-off of Shalini, Parag and Neha also form an A.P.
3. Weekly-off of Shalabh, Parag and Raj fall in the same week.
4. Weekly-off of Shalini and Vishal fall on a same week day.
5. Sunday is an official holiday in the company. None of the aforementioned dates falls on Sunday.

Q.56

Whose weekly-off date is a number which is double the difference between the dates of weekly-offs of Shalini and Vishal?

1 ☐ Neha

2 ☐ Parag

3 ☐ Richa

4 ☐ Shalabh



FeedBack

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🔍 Answer key/Solution

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

There are seven employees namely - Shalabh, Parag, Shalini, Neha, Raj, Vishal and Richa - in a company. Each of them has their weekly-offs on one of the dates - 5th, 9th, 11th, 13th, 17th, 28th and 31st - in month of July, not necessarily in the same order. Some more information is also available, which is as follows:

1. Dates of weekly-off of Shalabh, Parag and Raj are in A.P.
2. Dates of weekly-off of Shalini, Parag and Neha also form an A.P.
3. Weekly-off of Shalabh, Parag and Raj fall in the same week.
4. Weekly-off of Shalini and Vishal fall on a same week day.
5. Sunday is an official holiday in the company. None of the aforementioned dates falls on Sunday.

Q.57

Vishal's weekly-off falls on which date?

1 ☐ 31st

2 ☐ 17th

3 ☐ 11th

4 ☐ 28th



FeedBack

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🔍 Answer key/Solution

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

There are seven employees namely - Shalabh, Parag, Shalini, Neha, Raj, Vishal and Richa - in a company. Each of them has their weekly-offs on one of the dates - 5th, 9th, 11th, 13th, 17th, 28th and 31st - in month of July, not necessarily in the same order. Some more information is also available, which is as follows:

1. Dates of weekly-off of Shalabh, Parag and Raj are in A.P.
2. Dates of weekly-off of Shalini, Parag and Neha also form an A.P.
3. Weekly-off of Shalabh, Parag and Raj fall in the same week.
4. Weekly-off of Shalini and Vishal fall on a same week day.
5. Sunday is an official holiday in the company. None of the aforementioned dates falls on Sunday.

Q.58

Whose weekly-off's date can be a perfect square of a natural number?

1 ☐ Shalabh

2 ☐ Parag

3 ☐ Shalini

4 ☐ Vishal



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

8 questions are arranged in 4 different orders to create 4 sets of a question paper. This jumbling of questions is done in such a way that no question happens to be at the same question number in any two sets. The sets thus formed are named as Set-A, Set-B, Set-C and Set-D. Further, it is also known that:

- (i) Third question of Set-B, sixth question of Set-D, seventh question of Set-A and fifth question of Set-C are all same.
 - (ii) No question, out of the first three questions, of Set-B, Set-C and Set-D is the first or second question of Set-A.
 - (iii) First question of Set-C, sixth question of Set-B and eighth question of Set-D are all same.
 - (iv) Fifth question of Set-A, sixth question of Set-C and third question of Set-D are all same.
 - (v) First question of Set-B, fifth question of Set-D and third question of Set-A are all same.
 - (vi) First question of Set-A is the eighth question of Set-B and fifth question of Set-B is the fourth question of Set-D.
 - (vii) Second question of Set-B is sixth question of Set-A.
-

Q.59

Second question of Set-C is

1 ☐ **Third question of Set-A**

2 ☐ **First question of Set-D**

3 ☐ **Fifth question of Set-B**

4 ☐ **None of these**

FeedBack

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 **Answer key/Solution**

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

8 questions are arranged in 4 different orders to create 4 sets of a question paper. This jumbling of questions is done in such a way that no question happens to be at the same question number in any two sets. The sets thus formed are named as Set-A, Set-B, Set-C and Set-D. Further, it is also known that:

- (i) Third question of Set-B, sixth question of Set-D, seventh question of Set-A and fifth question of Set-C are all same.**
 - (ii) No question, out of the first three questions, of Set-B, Set-C and Set-D is the first or second question of Set-A.**
 - (iii) First question of Set-C, sixth question of Set-B and eighth question of Set-D are all same.**
 - (iv) Fifth question of Set-A, sixth question of Set-C and third question of Set-D are all same.**
 - (v) First question of Set-B, fifth question of Set-D and third question of Set-A are all same.**
 - (vi) First question of Set-A is the eighth question of Set-B and fifth question of Set-B is the fourth question of Set-D.**
 - (vii) Second question of Set-B is sixth question of Set-A.**
-

Q.60

If eighth question of Set-A is seventh question of Set-B, then eighth question of Set-C is

1 ☐ **Second question of Set-A**

2 ☐ **Second question of Set-B**

3 ☐ **Second question of Set-D**

4 ☐ **Either (1) or (2)**

FeedBack

 Bookmark

 Answer key/Solution

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

8 questions are arranged in 4 different orders to create 4 sets of a question paper. This jumbling of questions is done in such a way that no question happens to be at the same question number in any two sets. The sets thus formed are named as Set-A, Set-B, Set-C and Set-D. Further, it is also known that:

- (i) Third question of Set-B, sixth question of Set-D, seventh question of Set-A and fifth question of Set-C are all same.
- (ii) No question, out of the first three questions, of Set-B, Set-C and Set-D is the first or second question of Set-A.
- (iii) First question of Set-C, sixth question of Set-B and eighth question of Set-D are all same.
- (iv) Fifth question of Set-A, sixth question of Set-C and third question of Set-D are all same.
- (v) First question of Set-B, fifth question of Set-D and third question of Set-A are all same.
- (vi) First question of Set-A is the eighth question of Set-B and fifth question of Set-B is the fourth question of Set-D.
- (vii) Second question of Set-B is sixth question of Set-A.

Q.61

For how many questions, out of the eight, their question numbers can be uniquely identified in all the four sets?

FeedBack

 Bookmark

 Answer key/Solution

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

8 questions are arranged in 4 different orders to create 4 sets of a question paper. This jumbling of questions is done in such a way that no question happens to be at the same question number in any two sets. The sets thus formed are named as Set-A, Set-B, Set-C and Set-D. Further, it is also known that:

- (i) Third question of Set-B, sixth question of Set-D, seventh question of Set-A and fifth question of Set-C are all same.
- (ii) No question, out of the first three questions, of Set-B, Set-C and Set-D is the first or second question of Set-A.
- (iii) First question of Set-C, sixth question of Set-B and eighth question of Set-D are all same.
- (iv) Fifth question of Set-A, sixth question of Set-C and third question of Set-D are all same.
- (v) First question of Set-B, fifth question of Set-D and third question of Set-A are all same.
- (vi) First question of Set-A is the eighth question of Set-B and fifth question of Set-B is the fourth question of Set-D.
- (vii) Second question of Set-B is sixth question of Set-A.

Q.62

Which of the following is necessarily true?

- 1 ☐ Fourth question of Set-B is sixth question of Set-C.
- 2 ☐ First question of Set-B is second question of Set-C.
- 3 ☐ Sixth question of Set-A is seventh question of Set-C.
- 4 ☐ First question of Set-B is eighth question of Set-D.

FeedBack

 Bookmark

 Answer key/Solution

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

There is a cube of edge 7 cm. A carpenter was asked, firstly, to paint the faces of the cube in such a way that 3 faces of the cube are painted red, 2 faces are painted blue and 1 face is painted yellow. After he was done painting the cube, he was asked to cut the cube so as to divide it into 343 smaller cubes, each of edge 1 cm.

Q.63

If the three faces that are painted red are mutually adjacent to each other, then how many of the smaller cubes have exactly 2 faces painted and that too in 2 different colors?

- 1 ☐ 84
 - 2 ☐ 56
-

3 ☐ 40

4 ☐ 37

FeedBack

 Bookmark

 Answer key/Solution

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

There is a cube of edge 7 cm. A carpenter was asked, firstly, to paint the faces of the cube in such a way that 3 faces of the cube are painted red, 2 faces are painted blue and 1 face is painted yellow. After he was done painting the cube, he was asked to cut the cube so as to divide it into 343 smaller cubes, each of edge 1 cm.

Q.64

If the 3 faces that are painted red are not mutually adjacent to each other, then what could be the maximum number of smaller cubes which have at least one face painted blue?

FeedBack

 Bookmark

 Answer key/Solution

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

There is a cube of edge 7 cm. A carpenter was asked, firstly, to paint the faces of the cube in such a way that 3 faces of the cube are painted red, 2 faces are painted blue and 1 face is painted yellow. After he was done painting the cube, he was asked to cut the cube so as to divide it into 343 smaller cubes, each of edge 1 cm.

Q.65

What is the minimum possible number of smaller cubes that do not have any face painted red?

FeedBack

 Bookmark

 Answer key/Solution

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

There is a cube of edge 7 cm. A carpenter was asked, firstly, to paint the faces of the cube in such a way that 3 faces of the cube are painted red, 2 faces are painted blue and 1 face is painted yellow. After he was done painting the cube, he was asked to cut the cube so as to divide it into 343 smaller cubes, each of edge 1 cm.

Q.66

What percent of the total surface area of all the 343 smaller cubes is painted?

1 ☐ 12.5%

2 ☐ 25%

3 ☐ 14.28%

4 ☐ Cannot be determined

FeedBack

 **Bookmark**

 **Answer key/Solution**

Sec 3

Q.67

Base radius of a cylinder is increased in such a way that its volume is increased by 44%. What could be that increase in radius, if height of the cylinder remains constant?

1 ☐ 14.33%

2 ☐ 15%


3 ☐ 20%

4 ☐ 25%



FeedBack

 **Bookmark**

 **Answer key/Solution**

Q.68

Find the solution set of the inequality:

$\log_{10} x + (\log_{10} 10x)^2 + (\log_{10} 100x)^2 \leq \log_{10} (10)^9$, where x is a positive real number.

1 ☐ $x < 10^{-4}$


2 ☐ $x \geq 10^{\frac{1}{2}}$

3 ☐ $10^{-4} \leq x \leq 10^{\frac{1}{2}}$

4 ☐ None of these

Feedback

 Bookmark

 Answer key/Solution

Q.69

If $x/(0.1212121212\ldots) = 1/(0.2222222\ldots)$, then find x.

1 ☐ 11/6

2 ☐ 6/11

3 ☐ 7/11

4 ☐ 11/7



Feedback

 Bookmark

 Answer key/Solution

Q.70

A park is in the shape of an isosceles right angled triangle ABC, right angled at B. Two friends - Amit and Raman - started walking from vertex B. Amit walked along the sides of the triangle and returned back to the starting point. Raman walked along such a path such that he can reach the hypotenuse, AC, walking the shortest possible distance and returned to the starting point along the same path. If they both started simultaneously and reached back to the starting point together, then what is the ratio of their speeds?

1 ☐ $(\sqrt{2} + 2) : 2$

2 ☐ $\sqrt{2} : (\sqrt{2} + 1)$

3 ☐ $(1 + \sqrt{2}) : 1$

4 ☐ $2\sqrt{2} : (1 + \sqrt{2})$

FeedBack

 Bookmark

 Answer key/Solution

Q.71

While buying rice, Neerav made profit using a faulty balance of 1200 grams instead of 1000 grams. While selling them, he further marked up the price by 20% and then offered a discount of 25%. Find the net profit /loss of Neerav on the whole transaction.

1 ☐ 10% loss

2 ☐ 12.5% profit

3 ☐ 8% profit

4 ☐ 5% loss

FeedBack

 Bookmark

 Answer key/Solution

Q.72

For which of the following range of x , solution of both the functions : $f(x) = x^2 - 2x - 15$ and $f(x) = -(3x + 10 - x^2)$ is greater than zero?

1 ☐ $(-3, -2) \cup (4, 5)$

2 ☐ $(-\infty, -3) \cup (4, 5)$

3 ☐ $(4, 5)$

4 ☐ $(-\infty, -3) \cup (5, \infty)$

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.73

A man travels from city A to city B at speed of 45 km/hr and returns back from city B to city A at a certain speed. If his average speed for the entire journey is 90km/hr, then find his return speed?

1 ☐ 0 km/hr

2 ☐ 45 km/hr

3 ☐ 90 km/hr

4 ☐ Data inconsistent



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.74

If $t_1 = 10$, $t_2 = 7$, $t_{n+1} = t_n - t_{n-1}$ for $n > 1$, then find $t_1 + t_2 + t_3 + \dots + t_{50}$.

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.75

Apollo's teacher told his colleague "My age is not prime but odd and if you reverse the digits of my age and add that new number to my age, you obtain a perfect square. If you reverse the digits of my age and subtract that number from my age, you again obtain a perfect square." If the age of the teacher was a two-digit number, then his age is divisible by

1 ☐ 7


2 ☐ 9

3 ☐ 13

4 ☐ 15

FeedBack

 Bookmark

 Answer key/Solution

Q.76

A square sheet of side 8 units has 64 smaller squares, of side 1 unit each, drawn on it. Find the number of minimum colours required to paint the sheet such that no two adjacent squares, vertically, horizontally or diagonally, has the same colour.

FeedBack

 Bookmark

 Answer key/Solution

Q.77

A, B and C have some marbles with them in the ratio 5 : 4 : 3. Mr. X, uncle of B and C, gave both of them some marbles so that the ratio of marbles with A, B and C now becomes 3 : 4 : 5. Find the ratio of marbles given by Mr. X to B and C.

1 ☐ 1 : 1

2 ☐ 1 : 2

3 ☐ 2 : 1

4 ☐ 3 : 2



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.78

Shreya and Aarti can do a piece of work in 8 and 10 days respectively. They work on alternate days starting from Shreya. What fraction of work is completed in first seven days?

1 ☐ $27/40$

2 ☐ $31/40$

3 ☐ $4/5$

4 ☐ $7/8$



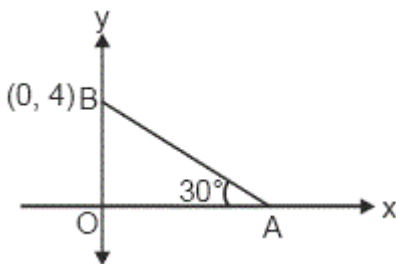
FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.79

What is the equation of the line AB, in the figure shown below?



1 ☐ $x + \sqrt{3}y = 4$

2 ☐ $5x - 3y + 15 = 0$

3 ☐ $5x - 3y - 15 = 0$

4 ☐ $x + \sqrt{3}y - 4\sqrt{3} = 0$



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.80

A cuboid with its length and breadth as 11 units and 10 units respectively, has its body diagonal of 15 units. Find the volume of cuboid.

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.81

A sum of money becomes 5200 after 6 months and becomes 8788 after one and half year at r% rate of interest compounded half yearly. Find the value of r.

✖

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.82

If the difference between the two roots of quadratic equation, $x^2 - ax + 2a = 0$, is less than $2\sqrt{5}$, then find the range of a.

1 ☐ $-3 < a < 5$

2 ☐ $2 < a < 10$

3 ☐ $-2 < a < 10$

4 ☐ None of these

✖

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.83

How many natural numbers less than 1000 have exactly 5 factors?

1 ☐ 5

2 ☐ 4

3 ☐ 3

4 ☐ Cannot be determined

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.84

Due to a man leaving the group of 6 people, the average weight of the group drops from 63 to 60. Find the weight of the man who left the group?



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.85

Rajat and Mann completed a job in 14 days, in which Mann was not available for the last five days. If $\frac{2}{3}$ of the job was completed in the first 8 days, then how long would Mann have taken to do the whole job?

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.86

What is the value of the expression $\left[\frac{1}{6^2-1} + \frac{1}{8^2-1} + \frac{1}{10^2-1} + \dots + \frac{1}{16^2-1} \right]$

1 ☐ 27/64

2 ☐ 21/32

3 ☐ 6/85

4 ☐ 8/85

✖

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.87

If $F(n+1) - F(n) = 2n$ and $F(1) = 3$, then find the value for $F(6)$.

✖

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.88

If N^2 ends with 76, where N is a natural number less than or equals to 350, then how many such N are possible?

1 ☐ 20


2 ☐ 15

3 ☐ 14

4 ☐ Cannot be determined

FeedBack

 Bookmark

 Answer key/Solution

Q.89

Soda and water are in ratio 3 : 7 and 5 : 2 in two different solutions. In what ratio should these two solutions be mixed so that the ratio of water and soda in the final solution turns out to be 2 : 3?

1 ☐ 21 : 8

2 ☐ 8 : 21


3 ☐ 2 : 3

4 ☐ 1 : 1

✖

FeedBack

 Bookmark

 Answer key/Solution

Q.90

Let p and q be the roots of the quadratic equation $x^2 - (\alpha - 2)x - \alpha - 1 = 0$. What is the minimum possible value of $(p^2 + q^2)$?

1 ☐ 0

2 ☐ 6

3 ☐ 4

4 ☐ 5

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.91

Working of two bulbs is as follows: Bulb A remains ON for first 4 seconds and then OFF for next 3 seconds, again ON for next 4 seconds and then OFF for next 3 seconds and so on. Bulb B remains ON for first 8 seconds and then OFF for next 5 seconds, again ON for next 8 seconds and then OFF for next 5 seconds and so on.

If both the bulbs were switched ON at the same time, then at what time (in seconds) will they be OFF simultaneously for the first time?

1 ☐ 50

2 ☐ 75

3 ☐ 43

4 ☐ 61

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.92

$$P = |x - 25| + |x - 50| + |x - 75| + \dots + |x - 200|$$

If value of P is minimum possible, then what is the difference between the maximum and the minimum possible integral value of x?

FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.93

Deepti told Bhawya, "When 10 times my birth month number is added to the 12 times the date of my birth, the result comes out is 388". In which of the following months could Deepti be born?

1 ☐ February

2 ☐ September

3 ☐ October

4 ☐ August



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.94

Two cars x_1 and x_2 move towards each other from point C_1 and C_2 respectively with their respective speeds of 20 m/s and 15 m/s. If it takes 10 seconds for car x_1 to reach C_2 after the point they met for the first time, then time taken by car x_2 to reach from C_2 to C_1 is

1 ☐ 15.5 sec

2 ☐ 31.1 sec

3 ☐ 8.4 sec

4 ☐ 16.8 sec



FeedBack

🔖 Bookmark

🔍 Answer key/Solution

Q.95

The terms a_1, a_2, \dots, a_{17} are in an Arithmetic Progression. If $a_3 + a_8 + a_{11} + a_{14} = 100$, then sum of the 17 terms of the A.P. is

1 ☐ 780

2 ☐ 425

3 ☐ 850

4 ☐ 390

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Q.96

Find the area of region confined by $|x| = |y|$ and $|x| = a$.

1 ☐ $2a^2$

2 ☐ $4a^2$

3 ☐ $6a^2$

4 ☐ $8a^2$

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Q.97

A circle with radius R is inscribed in a square and another circle with radius r is placed between the circle and the corner of square, touching sides of the square and the bigger circle. Find $R : r$.

1 ☐ $(2\sqrt{2} - 1) : 2$

2 ☐ $(\sqrt{2} - 1) : (\sqrt{2} + 1)$

3 ☐ $2 : 1$

4 ☐ $(\sqrt{2} + 1) : (\sqrt{2} - 1)$

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Q.98

Which of the following statements are necessarily true?

- A. If mid points of the side of a triangle are joined to form a new triangle, then area of this new triangle is $\frac{1}{4}$ th the area of the original triangle.
- B. Quadrilateral formed by joining the midpoints of the sides of rectangle is a square.
- C. Quadrilateral formed by joining the midpoints of the sides of quadrilateral has half the area of the given quadrilateral.

1 ☐ A, B and C

2 ☐ A and B

3 ☐ only A

4 ☐ A and C

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Q.99

What is the probability of choosing a number from the first 25 natural numbers such that the chosen number has its digital sum as 5?

1 ☐ $\frac{4}{25}$

2 ☐ $\frac{3}{25}$

3 ☐ $\frac{7}{25}$

4 ☐ $\frac{1}{25}$

✔

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🔖 Bookmark

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Q.100

If measure of each interior angle of a regular polygon is 135, then find the number of diagonals of the polygon.

1 ☐ 28

2 ☐ 20

3 ☐ 24

4 ☐ 32



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