

COVID-19 GMAT Questions

Instructions

- Try best to complete 40 questions within 80 min
- This question set covers all five parts – PS, DS, SC, CR, and RC – in GMAT Quant and Verbal
- The context of each question is designed based on the current COVID-19 pandemic
- The scenarios in some questions are hypothesized and may not fully in line with the reality
- You will see some common GMAT tricks and pitfalls when cracking the questions
- Do not use a calculator. All quant answers must be worked out by hand
- Have fun!

You can use the Answer Sheet on the next page or use your own one.

When completed, please email us your answers by qnv@qnvgroup.com.

We will check yours answers and reply to you within the shortest possible time.

Get Well Hong Kong, Get Over COVID

康復香港，時代抗疫

Answer Sheet

Question	Answer
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Question	Answer
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Question	Answer
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1. A hospital has 52 doctors and 234 nurses, whom will be divided into different teams. If the ratio of doctors to nurses must be the same in all teams, what is the maximum number of teams formed?

- A. 2
- B. 3
- C. 9
- D. 13
- E. 26

2. A hospital has 360 nurses. The hospital administrator, who is planning the best use of resources, is thinking about how to divide the nurses into teams. There are two requirements. Firstly, no matter how many teams can be formed, the number of nurses in all teams must be the same. As such, there are many ways to form teams, say 1 team of 360 nurses, 2 teams of 180 nurses, 3 teams of 120 nurses, 4 teams of 90 nurses etc. Secondly, there must be at least 10 teams of nurses. Under this requirement, how many possible ways for forming teams?
- A. 14
 - B. 15
 - C. 16
 - D. 18
 - E. 24

3. In mid-Apr 2020, the five countries of the most cases COVID-19 are:

Countries	Confirmed Cases
US	500000
Spain	160000
Italy	150000
France	125000
Germany	120000

The standard deviation is 145000. Removing which of the country from the above group will result in the largest increase in the standard deviation?

- A. US
- B. Spain
- C. Italy
- D. France
- E. Germany

4. A ward contains 55 patients. Each patient carries a unique identity code. The identity code can be formed by one alphabet, or two, three, or four distinct alphabets. For identity codes with more than one alphabet, the alphabets must be in ascending order from left to right, say AC, ACD, BCDE etc. As such, what is the minimum number of alphabets used to form sufficient identity codes for the group?
- A. 3
 - B. 5
 - C. 6
 - D. 13
 - E. 26

5. A medical treatment program was tried out in 16 wards in each of 4 hospitals and involved 45 doctors. Each of the wards had at least 1 doctor and each of the doctors took care of at least 1, but not more than 4, of the wards. If the number of doctors who took care of 4 wards is A , then the least and greatest possible values of A , respectively, are
- A. 0 and 5
 - B. 0 and 6
 - C. 1 and 5
 - D. 1 and 6
 - E. 2 and 6

6. A hospital has 344 COVID-19 patients, each of whom was given a unique identity code between 1 and 344 inclusive. The information of these patients is saved in a database protected by a passcode equal to the summation of all digits on the identity codes of all patients. What is the passcode?

- A. 3205
- B. 3298
- C. 3353
- D. 3398
- E. 3405

7. For some purposes, the admin office has to print out strips to indicate the pattern of male patients and female patients in the queue for COVID-19 treatment. A few examples of the strips are shown as follows:

Strips	Patterns															
Example 1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Example 2	F	M	M	M	M	M	M	F	M	F	M	F	M	F	M	F
Example 3	M	F	F	M	M	M	F	M	F	M	F	M	F	M	F	M
Example 4	F	F	F	F	F	M	M	M	M	F	F	M	F	F	M	M
Example 5	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F

Where M indicates male patients and F indicates female patients.

The admin office will use a high-speed printer is to print out all possible patterns at a constant speed of 32 letters per second. Assume no delay or pause, how many hours approximately will the printer take to print out all possible patterns?

- A. 9
- B. 10
- C. 12
- D. 18
- E. 20

8. There are two COVID-19 patients and eight non-COVID-19 patients in an isolation ward. If four patients are randomly called to do a certain medical check, what is the probability of having at least one COVID-19 patient in one medical check?

- A. $1/15$
- B. $2/15$
- C. $8/15$
- D. $2/3$
- E. $1/6$

9. A mask factory has two production lines, namely D689 and D777. Both lines produce exactly the same masks but with different operating hours per day. In a normal situation, as the demand for masks is not high, either one production line operates to produce the required number of masks per day. However, during the outbreak of COVID-19, the demand becomes so high that both lines have to operate together. As such, how many hours will both lines operating together take to double the number of masks produced per day by either one line?
 1. D689 operates 12 hours a day and D777 operates 8 hours a day
 2. Each line is required to produce 5000 masks per day

10. A hospital administrator will assign each patient in a group of N patients to one of M wards. If $2 < M < 13 < N$, is it certain that if each of the N patients is assigned to one of the M wards, each ward will have the same number of patients?

1. It is possible to assign each of $5N$ patients to one of M wards so that each ward has the same number of patients assigned to it.
2. It is possible to assign each of $17N$ patients to one of M wards so that each ward has the same number of patients assigned to it.

11. A patient went to a pharmacy to buy a number of bottles of cough syrup. The syrup had to be brought in a batch of 5 bottles. After he paid, he got change of \$10. What was the price of a bottle of syrup?

1. The patient's payment was between \$700 and \$800
2. The pharmacist told the patient if he didn't want the change, he could get one more bottle of cough syrup. This offer was equivalent to \$2.5 off for each bottle he bought

12. A hospital has shifts nurses to look after the COVID-19 patients. The number of teams in the first shift is A and that in the second shift is B . All teams in the first shift have the same number of nurses and so do the teams in the second shift. If the total number of nurses is 25, how many nurses in each team in the first shift and in each team in the second shift?

1. $2 < A < 4 < B < 8$
2. $2 < A < 6 < B < 8$

13. In a hospital, the department of infectious disease has three teams of nurses – A, B, and C – who are of the same grade and medical expertise. The department requires that the number of nurses in team C be the same as the number of wards. Moreover, it is known that the number of nurses in team A is 8 times that of team B. Is it possible to assign all the nurses uniformly to all the wards such that no nurse will remain unassigned?

1. The number of nurses in team C is 3
2. The number of nurses in team B is 5

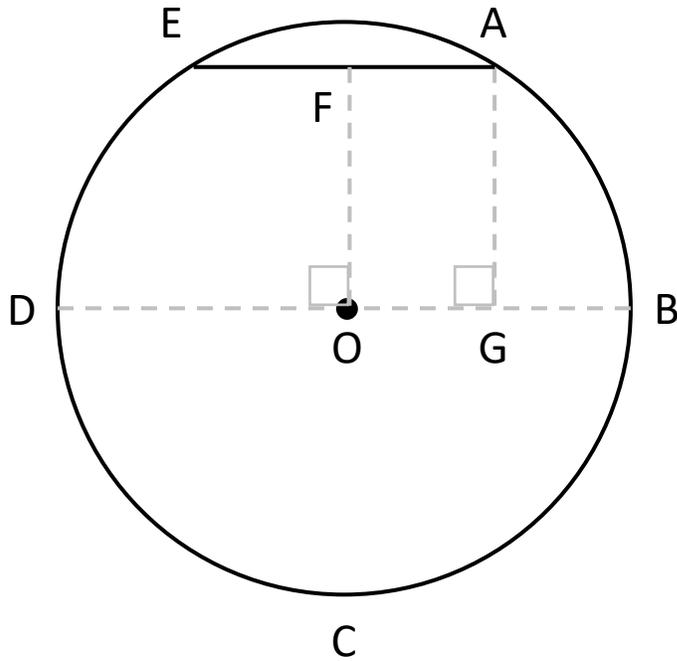
14. A nurse measured the blood pressures of seven patients and recorded their diastolic values (lower numbers) for further analysis. It is known that, in those patients, the greatest diastolic value is 1.5 times that of the lowest one. What is the greatest diastolic value?

1. The mean of the seven diastolic values is 78
2. The median of the seven diastolic values is 84

15. A quarantine centre is purposely built to accommodate 60 patients who have travelled to three countries – China, the US, and/or the UK. It is confirmed that 26 patients have been China, 27 patients have been the US, and 28 patients have been the UK. How many patients have been both China and the US?

1. 6 patients have been all three countries
2. The numbers of patients who have been exactly two countries are the same

16. The cough syrup is stored in a cylinder in horizontal orientation as shown below. If the diameter of the cylinder is 5cm, what is the cross-sectional area of the part filled with the cough syrup, i.e. area ABCDEF?



1. $AG/BG = 2$
2. $AE/BD = 3/5$

17. SARS was a significant event in Hong Kong history. SARS, being first identified in China in November 2002, was brought to Hong Kong in February 2003 by a doctor from China. Within four months, it infected over 1,700 people and claimed 299 lives in Hong Kong, prompting the government to declare the city as an infected area.
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18. Comparing with SARS, COVID-19's contagion power is at least three times greater. Because Hong Kong experienced SARS 17 years ago, many Hongkongers willingly wear masks that enable the city to mitigate the widespread of COVID-19, keeping its infection cases low till a large inflow of people overseas.
- A. Comparing with SARS, COVID-19's contagion power is at least three times greater. Because Hong Kong experienced SARS 17 years ago, many Hongkongers willingly wear masks that enable the city to mitigate the widespread of COVID-19, keeping
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19. The WHO has paid the best efforts to keep the statistics of COVID-19 worldwide transparent and up-to-date. However, with the number of confirmed cases soaring, it admits what is much difficult to keep track is the sources the patients got infected, the virus carriers they contacted, and the people they reached out to. As yet, as much as six percent of two million people have died from the pandemic.
- A. with the number of confirmed cases soaring, it admits what is much difficult to keep track are the sources the patients got infected, the virus carriers they contacted, and the people they reached out to. As yet, as much as six percent of the two million people infected worldwide has died from the pandemic.
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20. A recent decision made by the Director-General, whom is seen by many medical experts as an incompetent professional to realize the severe threat of COVID-19, is also seen by many national leaders as both a biased act to favour some countries and an impotent move to stop the widespread of COVID-19.

- A. whom is seen by many medical experts as an incompetent professional to realize the severe threat of COVID-19, is also seen by many national leaders as both a biased act to favour some countries and an impotent move to stop the widespread of COVID-19.
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- C. who is seen by many medical experts as an incompetent professional to realize the severe threat of COVID-19, is also seen by many national leaders as both a biased act to favour some countries and an impotent move to stop the widespread of COVID-19.
- D. who many medical experts consider an incompetent professional to realize the severe threat of COVID-19, is considered by many national leaders both a biased act to favour some countries and an impotent move to stop the widespread of COVID-19.
- E. whom is considered by many medical experts an incompetent professional to realize the severe threat of COVID-19, is also considered by many national leaders both a biased act to favour some countries and an impotent move to stop the widespread of COVID-19.

21. Prof. KY Yuen, together with colleagues at two universities, are working on ways to examine the properties of COVID-19 virus, research into medication for curing the pandemic, and stop the widespread of the virus in Hong Kong. He was a former Council Member of the University of Hong Kong, but he resigned from the position for focusing his efforts on scientific research rather than political conflicts.
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22. Dr Li Wenliang, who was a Chinese ophthalmologist at Wuhan Central Hospital, shared his warning of finding a new virus that resembled SARS virus in December 2019. However, he was later accused of rumor mongering as nobody was able to find solid proof for the new virus to exist. Dr. Li was infected by the new virus and died in February 2020, but people credited him for his brave whistleblowing act.
- A. nobody was able to find solid proof for the new virus to exist. Dr. Li was infected by the new virus and died in February 2020, but people credited him for his brave whistleblowing act.
 - B. nobody was able to find solid proof for the new virus to exist. Dr. Li was infected by the new virus and died in February 2020, but people credited him with his brave whistleblowing act.
 - C. nobody could find solid proof for the new virus to exist. Dr. Li was infected by the new virus and died in February 2020, but people credited him for his brave whistleblowing act.
 - D. nobody could find solid proof that the new virus exists. The new virus infected Dr. Li and made him die in February 2020, but people credited him with his brave whistleblowing act.
 - E. nobody could find solid proof that the new virus exists. Dr. Li was infected by the new virus and died in February 2020, but people credited him with his brave whistleblowing act.

23. Responding to the questions raised by the media, the economist opines that the slew of financial relief measures rolled out by the government to help commercial companies ride through the economic downturn caused by COVID-19 by initiatives like subsidies on salary, support on operating cashflow, delay of loan repayment, stimulation of demand, and recovery of consumer confidence have small likelihood of success. He demands that the government should help the employees instead of employers.
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 - E. initiatives such as subsidies on salary, support on operating cashflow, delay of loan repayment, stimulation of demand, and recovery of consumer confidence have little likelihood of success. He demands that the government help the employees rather than employers.

24. Studies show that elderly people with chronic medical conditions including heart disease, lung disease, diabetes, cancer, and hypertension, and their living conditions are poor, polluted, or overcrowded, are more likely than others to get infected with COVID-19.

- A. and their living conditions are poor, polluted, or overcrowded
- B. whose living conditions are poor, polluted, or overcrowded
- C. and their living conditions are poor, polluted, or overcrowded
- D. and whose living conditions are poor, polluted, or overcrowded
- E. and with living conditions poor, polluted, or overcrowded

25. According to the global statistics of confirmed COVID-19 cases, the numbers of confirmed cases in many developed countries like the US, Germany, the UK etc. are greater than those in the developing countries, even though the healthcare systems in the developed countries are in general better than those in the developing countries. Obviously, COVID-19 affects more affluent societies, partly because people there can afford travelling abroad and thus become more exposed to infections.

Which of the following statements cast the most doubt on the above argument?

- A. WHO Director-General came from a developing country, so he understands the healthcare situations in those countries clearly and leads effective actions to contain the outbreak of COVID-19
- B. The population of developing countries is generally less than that of developed countries, so their number of confirmed cases must be lower
- C. Developing countries have significantly improved their healthcare systems thanks to the strong support from the WHO, so they could take better actions to combat COVID-19
- D. Developing countries have less established COVID-19 case reporting systems, so the figures reported in those countries may be lower than the actual ones
- E. During the Ebola outbreak in West Africa in 2014 – 2016, the total number of confirmed cases in the those developing countries was much greater than that in the developed countries

26. Recently, scientists started to believe that the coronavirus causing COVID-19 can be spread by “airborne transmissions”, so tiny aerosol droplets – smaller than 5 micrometers in diameter – carrying the coronavirus can linger in the air for hours. This transmission mode can spread the coronavirus much further than 2 metres and cause more damage when inhaled because they travel further into the lungs. However, the WHO has urged caution saying the available evidence has yet to support this.

Which of the following, if true, provides the strongest support for the scientists’ argument?

- A. There was a case that after a person had talked with a coronavirus carrier without masks for 20 seconds, the person was confirmed infected two days later.
- B. An experiment showed that the coronavirus can be detected in the air up to 3 hours after aerosolization and can infect cells throughout that time period.
- C. An experiment found that the half-life of the coronavirus varies on different surfaces – about 0.8 hours on copper, 3.5 hours on cardboard, 5.6 hours on steel, and 6.8 hours on plastic.
- D. The WHO has not yet conducted any experiment to measure the infection power of the coronavirus in the air for different durations of aerosolization.
- E. The WHO was reported to be poorly managed and influenced by some political powers, so the Organization may have some bias in reporting the truth

27. Wearing masks is an effective means to mitigate the widespread of pandemic because the masks can block small droplets containing virus exhaled from patients. In a country in Southeast Asia, the government told its citizens that they did not need to wear masks if they did not have any COVID-19 symptom. Consequently, most people did not wear masks even though the number of confirmed cases increased significantly every day.

Which of the following statements is the assumption of the government's argument?

- A. People will spread coronavirus only if they have COVID-19 symptoms
- B. People wearing masks will stir up the fear of COVID-19 outbreak in society
- C. Masks can block patients exhaling small droplets but not inhaling them
- D. Legal restriction is not the best means to require people to wear masks
- E. Some other countries do not require people to wear masks

28. Some government officers in Hong Kong suggested that when the summer comes, COVID-19 in Hong Kong will subside as the higher temperature in the summer will denature the coronavirus. A similar phenomenon happened in SARS in 2003. At that time, when the summer came, SARS in Hong Kong subsided naturally. As it is April now, people can expect that COVID-19 will subside very soon and they can resume their normal life.

Which of the following present the best way to evaluate the government officers' argument in a quantitative approach?

- A. The average monthly temperatures and confirmed COVID-19 cases recorded in Mar 2020 of 210 countries
- B. The correlation between daily temperatures and 100-day moving average of daily new COVID-19 cases
- C. The correlation between daily temperatures and daily new COVID-19 cases
- D. The cumulative confirmed COVID-19 cases since the outbreak in Jan 2020
- E. A survey on the most influential coronavirus experts globally to seek their views

29. To help commercial companies in Hong Kong mitigate the economic impact brought by COVID-19, the Hong Kong government rolled out the largest ever financial relief package in Hong Kong history, subsidizing the half salary of each eligible employee for six months subject to a monthly cap at HK\$9,000. At the same time, the owners of those commercial companies are known to scoop up the most benefits from the package. For example, they plan to ask their employees to take unpaid leave for six months so that they do not need to pay the salaries while receiving the salary subsidies from the government.

Which of the following conclusions can most properly be drawn if most owners of the commercial companies act as what is stated in the passage?

- A. The Hong Kong government is a good government in the sense that they are willing to help the commercial companies through the largest ever financial relief package
- B. Most of the commercial companies will survive the COVID-19 crisis through the salary subsidies of the financial relief package
- C. The owners of the commercial companies do not think their acts will damage the owner-employee relationship
- D. The cap of HK\$9000 is not enough to help commercial companies survive the COVID-19 crisis, otherwise they will not ask their employees to take unpaid leave
- E. Most eligible employees in Hong Kong will unlikely benefit from the government's financial relief package

30. COVID-19 is a highly contagious pandemic. It was found that COVID-19 has an effective transmission distance of 1.5 metre. It means that a person without any protection measures will have a higher chance of infection within 1.5 metre of a COVID-19 carrier. In this regard, the government has to do something to minimize the infection.

Which of the following, if performed by the government, could logically be expected to minimize the infection most effectively?

- A. Require people to wear masks in public areas and keep social distancing of at least 1.5m
- B. Research possible ways to create vaccine against COVID-19 infection
- C. Close the border to stop all foreigners entering the country
- D. Ask people to take more vitamin C to strengthen their immune systems
- E. Increase transparency of infected cases daily to enhance people's awareness of COVID-19

31. To stop the widespread of COVID-19, the government has funded the production of a special type of masks. This type of masks has a layer of copper oxide powder that can effectively inactivate the virus, so it is also named "Copper Mask". Moreover, Copper Masks can be reused for 60 times with proper cleaning, saving the consumers' cost and reducing waste. Therefore, the government distributed Copper Masks to the public for free. However, medical experts warned that the government's act would do more harm to the public.

Which of the following can provide the best explanation for the medical experts' warning?

- A. The style of Copper Mask is very old fashioned that nobody wants to wear
- B. Copper Mask has six plies that make users difficult to breath in and out air
- C. The materials used in Copper Mask will suffer from minor damage each time it is cleaned
- D. The manufacturer of Copper Mask is owned by a family member of a senior government official
- E. Mask users can easily inhale the copper oxide powder, leading to severe pulmonary fibrosis

32. With the number of confirmed COVID-19 cases soaring, many Hong Kong people demanded that the borders be closed to stop the inflow of virus carriers into Hong Kong. Otherwise, the widespread of the virus could not be controlled without disconnecting source of the virus. However, the government argued strenuously that no borders should be closed as the act of border closure would be considered discrimination against some people.

What is the flaw in the government's argument?

- A. The government did not seriously study the effect of border closure before making the argument.
- B. The government cited an unrelated reason to explain why it insisted the border not be closed.
- C. The government underestimated the effect of border closure to prevent the inflow of patients
- D. The government misbelieved they could stop the widespread of the virus without closing the borders
- E. The government officers, especially the senior ones, have no ability to make right decisions

As of April 6, 2020, more than 1.3 million people worldwide have tested positive for COVID-19, with over 74,000 confirmed deaths so far. Those numbers are continuing to grow at an alarming rate, with over 70,000 new cases and 5,000 new deaths per day. However, there is a tremendous bright spot that remains undimmed: the power of our scientific knowledge to guide us through these difficult times.

We no longer live in an era where we have to rely on assumptions or superstitions to understand what's occurring. We know what COVID-19 is. We know how it spreads through the human population. We know how to fight it, how to treat it, and how to minimize the death rate from it. If we want superior tools to combat the threats that humanity will face not just today, but 50 to 100 years down the line, now is the time to **redouble our efforts**.

Scientific investment needs to occur not only on the front lines of the current crisis, but also on a wide-variety of fundamental levels. Innovations have been impossible without an advanced fundamental knowledge of the world. Many of today's most powerful medical inventions are rooted in the fundamental discoveries made at the frontiers of the physical world, from X-ray to MRI to positron emission tomography (PET) scanning and many more.

COVID-19 is having a tremendous impact on our world at the present time, but our response can demonstrate just how far we have come as a civilization. The entire Universe obeys the same scientific rules, and the better (and more fundamentally) we study it, the better prepared we will be for the challenges that come our way.

Source: Forbes (abridged and edited)

<https://www.forbes.com/sites/startswithabang/2020/04/07/the-3-ways-science-will-get-us-through-the-covid-19-pandemic/#1631f6342fc3>

33. What is the primary purpose of this passage?

- A. Appeal for concerted efforts from all countries to combat COVID-19
- B. Advocate scientific investment in the fundamental levels for betterment of all humanity in the future
- C. Discuss the evolution of science from the invention of X-rays to the ways to combat COVID-19
- D. Explain how the power of scientific knowledge can help humanity overcome COVID-19
- E. Evaluate of impact of COVID-19 on scientific development of humanity

34. **“COVID-19”** plays which of the following roles in the passage?

- A. It is the primary theme of discussions
- B. It is a subject under investigation for its causes and consequences
- C. It is evidence to show how human civilization combats challenges
- D. It is an example leading to deeper discussions about some more fundamental matters
- E. It is an item of no significance

35. What can be inferred from the third paragraph?

- A. Scientific investment will definitely lead to innovations that are useful for humanity
- B. Medical inventions are the best examples to showcase the importance of scientific investment in fundamental levels
- C. Scientific investment in fundamental levels could result in innovations that are useful for humanity
- D. PET is more powerful than MRI, and MRI is more powerful than X-ray, to humanity
- E. Inventions rooted in fundamental discoveries are as useful as those originated from front lines of crisis

36. What does “**redouble our efforts**” in the end of the second paragraph mean?

- A. Efforts to tackle with the current situation and look into the fundamental levels of science
- B. Efforts to combat COVID-19 and prevent its recurrence
- C. Efforts to combat the threats that humanity faces today and 50 to 100 years down the line
- D. Efforts to combat COVID-19 and continue scientific investment
- E. Efforts to invent practical things for use and researching fundamental theories of science

37. Which of the following is an example of invention based on the fundamental levels of science?

- A. The application of graphene in energy storage for increase in capacity
- B. The development of artificial intelligence from the theories of machines learning
- C. The evolution of analogue phones to smart phones with the use of microprocessors
- D. The invention of scanning tunneling microscopes based on the wave-particle theory of quantum physics
- E. The creation of laser interferometers for detection of gravitational waves

38. Information in the passage indicates that the author would most probably regard which of the following statements as correct?

- A. Scientific investment in fundamental levels of science today will lead to knowledge in the future
- B. COVID-19 is the most severe pandemic in human history
- C. COVID-19 will eventually be eradicated with our scientific investment
- D. Assumptions or superstitions will undermine our understanding of COVID-19
- E. Medical inventions that are more powerful than X-ray, MRI, and PET etc. will emerge in the future

39. Information in the passage indicates that which of the following statements is INCORRECT?

- A. The death cases of COVID would likely reach 350,000 by June 2020
- B. COVID will ultimately be eliminated by humanity, just a matter of time
- C. How to get rid of COVID is a more urgent issue to tackle with than how to create vaccines to prevent it
- D. Scientific study on the fundamental levels can help humanity better prepare for future challenges
- E. Humanity still need to figure out how COVID is spread and how it causes deaths

40. Which of the following statements would provide the most of logical continuation of the final paragraph of the passage?

- A. With tremendous effort of humanity to fight against COVID-19, we will overcome the pandemic in the near future.
- B. Although we all face the difficult times at present, we should not stop scientific investment, in particular in the front lines of the crisis.
- C. The scientific investments we make today will lead to tomorrow's knowledge, which will, in turn, lead to a better world for all of humanity.
- D. COVID-19 will mark an important milestone in human civilization, as the crisis will eventually lead to many powerful medical inventions to combat with more severe pandemics in the future.
- E. As long as the entire Universe obeys the same scientific rules, our scientific investments can address all challenges that are unknown now but become known in 50 to 100 years down the line.