PROVE UFFICIALI DEGLI ANNI PASSATI

IMAT 2020

A B C D E

FAC-SIMILE DA SVOLGERE

Risposte in ordine casuale e foglio delle risposte

WHAT'S IN THIS DOCUMENT

Prova di ammissione IMAT 2020, pubblicata dal Ministero dell'Università e della Ricerca (accessoprogrammato.mur.gov.it). Versioni, soluzioni e commenti di TestBuddy, che non è collegata al Ministero.

- The questions laid out by TestBuddy, with the answers in random order
- The answer sheet
- The answer key

General Knowledge and Logical Reasoning	22 questions
Biology	17 questions
Chemistry	12 questions
Physics and Mathematics	6 questions
Total	**57 questions**

This version has **57 of the 60 questions** of the paper, the ones with our explained solution; the full paper is in the «official paper» file.

HOW TO USE IT

1 · TIMED

Give yourself about a minute and a half per question, no notes, as in the exam.

2 · CHECK

Mark the wrong answers and read why each one is wrong, not only the right one.

3 · REVIEW

Go back to the topics where you made most mistakes and redo the questions in the app.

GENERAL KNOWLEDGE AND LOGICAL REASONING

1 **Thousands of books and blogs – and quite a bit of legitimate science – sing the praises of positivity. Optimistic, happy people tend to be healthier, more physically active and more successful. They may even live longer. But as shown by research, positivity, when deployed at the wrong time or in the wrong amount, can have negative effects. For example, when it comes to waiting for the results of an exam or a job interview, 'being prepared for the worst' is shown to be a better strategy for protecting ourselves than categorical optimism. When it comes to health, negative thinking spurs people into seeking information and engaging in healthy behaviour. Finally, relentlessly positive people may seem dismissive or insensitive to friends who are having difficulties, seeming to make light of their problems.**

Which one of the following best expresses the main conclusion of the above argument?

A Negative thinking about health can be beneficial.
B People who think positively live longer.
C Research into positivity has so far ignored its potential downsides.
D Positive thinking is not always helpful.
E Being overly positive can damage our relationships with friends.

2 **Although the idea of a driverless vehicle seems like the stuff of science fiction, we are moving very close to the reality of self-driving cars. But we are so engrossed in the technology that we are ignoring the legal implications – and legislating for new scenarios takes time. A whole new set of questions is raised by the development of these machines. One example is the question of who takes responsibility when an accident happens. Given that the vast majority of crashes are caused in part at least by human error, self-driving cars should have the capacity to save lives. But they will not be perfect. So if an accident happens, who is responsible? The owner of the car, or the manufacturer of the car? The car itself cannot be prosecuted or made to pay damages.**

Which one of the following can be drawn as a conclusion from the above passage?

A It will be impossible to determine liability for accidents involving driverless cars.
B All the technology needed to create a self-driving car is already available.
C New laws are needed to determine liability for accidents involving driverless cars.
D We should not continue to develop self-driving cars.
E The design of driverless cars will continue to improve with time.

3 **In 1938 the Dutch artist Piet Mondrian left Paris to escape the threat of German invasion and went to live in London, where he painted what are now regarded as his best works. Mondrian had the option of moving to a more rural area in England, but chose London because of his love of the diverse and vibrant culture of big cities. This explains why London has more artists living in it than any other city in England.**

Which one of the following is an underlying assumption of the above passage?

- (A) There is less inspiration for artists in rural areas.
- (B) Artists can only create great works if they are happy and relaxed.
- (C) London is a big city because all the artists who live there boost its size and population.
- (D) Other big cities in England have the same attractive features as London.
- (E) Other artists make the same choice as Mondrian for the same reasons.

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4 **In some countries, prisoners may purchase books with the money they earn by working. Hence receiving gifts of books may discourage prisoners from undertaking paid work while in prison. This work is important in building self-esteem and encouraging a work ethic among prisoners. In any case, prisoners have access to books through the prison library. Therefore prisoners should not be allowed to receive parcels containing books from friends or relatives while they are serving their sentence.**

Which one of the following, if true, most strengthens the above argument?

- (A) Many parcels of books sent by relatives or friends have been found to contain illegal drugs.
- (B) The range of books available in prison libraries is limited.
- (C) Many prisoners have difficulty finding work when they are released because of their low level of literacy.
- (D) Prisoners often read detective stories which may encourage them to glamorise crime.
- (E) Prisoners have to purchase a range of items from their wages, including a television licence.

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5 **People who take their holidays in Las Vegas love to gamble. Gerry will be going to France for his holiday so he must not like gambling.**

Which one of the following most closely parallels the reasoning used in the above argument?

- (A) You have to find the password to complete the game. You haven't finished the game yet so you can't have found the password.
- (B) People who eat a lot of sweets have rotten teeth. You eat a lot of sweets, so your teeth must be rotten.
- (C) People who live in the city hate traffic jams. You live in the country so you must like traffic jams.
- (D) You always walk when you are visiting your sister. You are not visiting your sister so that's why you are taking the car.
- (E) In England cars are driven on the left side of the road. We are driving on the left, so we must be in England.

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6 **LoCost sells three different types of washing powder: Zoom, Zap and Ownbrand. Zoom is a double concentrate brand needing only half the amount of powder used by the other two brands.**

Which one of the boxes of powder below represents best value for money?

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B <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2Fx12e21i21j12xe.png?alt=media&token=5493737d-84f6-4299-8ca0-b512f1848c24<i>

C <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2Fc8e1u28cu1ce12.png?alt=media&token=2c712c6a-f646-4c7b-a99c-f00c24c46525<i>

D <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2Fce81u28ue181c2e.png?alt=media&token=76c25553-5449-4a4c-a040-693ed7d76922<i>

E <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2Fc1e2121yu12u8c1.png?alt=media&token=6a5651dd-dd78-4d90-b717-93dcdcdc8da2<i>

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7 **36% of the contents of a tin of sweets have been eaten. Today, 25% of the remaining sweets will be eaten. The same number of sweets will be eaten on each of the following 2 days.**

What % of its original contents will it then contain?

A 25

B 15

C 16

D 9

E 24

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8 **As part of a maths project, a class of 30 children conduct a survey amongst themselves of how many brothers and sisters they have. They each write their name in the appropriate space on the chart below.**
No one in the class has a brother or sister who is also in the class.

How many of the 30 families involved in the survey have a total of 3 or more children?

		BROTHERS			
		0	1	2	3
SISTERS	0	Sara Jordan Ben Ellie	Kylie Gita Tamsin Sam Adam Bethany Craig	Leroy Gemma	Callum
	1	Kate Jessica Robin Vikram Sally Scott Chloe Oliver	Rajiv Emily Fatima	Paul	
	2	Aruna	Candice Marvin		
	3		Phoebe		

A 8
B 10
C 11
D 6
E 7

9 **Jeff is looking to buy a new car. He will only be using it for commuting to his workplace for 1 year and will have a total annual mileage of 20 000. He wants to buy the car which would make his total spend over the year, including the initial cost of the car, the lowest.**

Using the table above, which type of car should he buy?

type of car	*cost to fill or charge tank* ($)	*distance on full tank or charge* (miles)	*car cost* ($)
autogas	30	200	10 000
diesel	50	500	12 000
petrol	50	400	10 000
hydrogen	50	200	9500
electric	5	200	12 500

A hydrogen
B petrol
C diesel
D autogas
E electric

10 **A piece of paper is laid on a table in landscape orientation (i.e. the longer side running left to right and the shorter side running top to bottom). This piece of paper is then folded in half four times, alternately by moving the left hand side across over the right hand side and folding, and by moving the top half down over the bottom half and then folding. After each fold a dot is made with a pen in the centre of the face showing on the table.**
After the four folds and four dots, the paper is unfolded in the reverse sequence and is then turned over so that the four dots are showing.

What is the pattern of the dots on the paper?
(Dotted lines represent the fold marks)

A <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2F38rcu1cr21u.png?alt=media&token=9197164a-b31e-46b6-9dbd-5321f4af297b<i>

B <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2F1c2e1i2e12cj12.png?alt=media&token=61575656-a6b0-41cd-9296-6c0ed42c81f1<i>

C <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2Fr8cu82uc218rc.png?alt=media&token=8600a42f-cd90-4cb7-8463-45329f55fb92<i>

D <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2F9e129c1212c.png?alt=media&token=b52bfe4c-58a3-4ab1-83cc-607e30c48913<i>

E <i>https://firebasestorage.googleapis.com/v0/b/e2-ms01.appspot.com/o/Assets%2FImages%2FQuizzes%2Fc12e89128cu8ce.png?alt=media&token=ca609033-97db-4d5a-8bd1-94eacc0ba514<i>

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11 **Which of the following languages is not a member of the 'Romancè language family?**

A Romanian

B Bulgarian

C Catalan

D Spanish

E French

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12 **Which of these people did NOT win the Nobel Prize in Literature?**

A Pablo Neruda

B Thomas Mann

C Harold Pinter

D Bob Dylan

E Charles Dickens

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13 **Which one of the following is the director of the film Amarcord ?**

A Alfred Hitchcock
B Federico Fellini
C Francis Ford Coppola
D François Truffaut
E Stanley Kubrick

14 **Which of the following books was NOT written by Primo Levi?**

A The Truce
B Beyond Good and Evil
C The Drowned and the Saved
D If Not Now, When?
E If This Is a Man

15 **The name of the German mathematician Carl Friedrich Gauss is famously associated with**

A the law of supply and demand
B the uncertainty principle
C the normal distribution curve
D Bayes' theorem
E the sine function

16 **Which one of the following was the first human to complete an orbit of the Earth in 1961?**

A John Glenn
B Yuri Gagarin
C Valentina Tereshkova
D Neil Armstrong
E Buzz Aldrin

17 **Which one of the following pairs of archipelago/country is NOT correct?**

A Canary Islands – Spain
B Azores – Portugal
C Hawaii – United States of America
D Galapagos Islands – Ecuador
E Cape Verde – Brazil

18 **Which one of the following international organisations maintains a list of the World Heritage Sites of outstanding cultural or natural importance?**

A OECD
B WTO
C WHO
D UNICEF
E UNESCO

19 **Which one of the following pairs of currency/country is NOT correct?**

A Peso – Argentina
B Rand – South Africa
C Euro – Hungary
D Rupee – India
E Baht – Thailand

20 **Which of the following institutions of the Republic of Italy is democratically elected by direct universal suffrage?**

A High Council of the Judiciary
B Government
C Senate of the Republic
D President of the Republic
E President of the Council of Ministers

21 **Which one of the following is NOT a principle of the sharing economy?**

A Access is preferable to ownership.
B Competition is dangerous.
C Stranger danger can be overcome.
D Transparent and open data increases innovation.
E Unused value is wasted value.

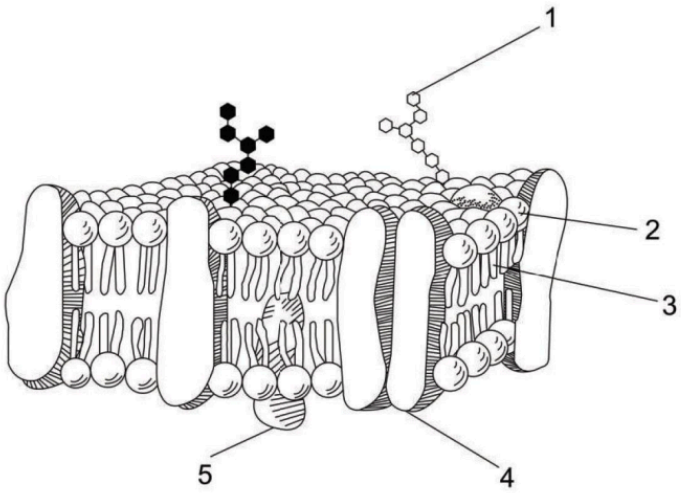
22 **The Fields medal is a prestigious award in the field of**

A Economics
B Psychology
C Biology
D Music
E Mathematics

BIOLOGY

23 **The diagram represents the fluid mosaic model of a cell membrane.**

Which one of the labels 1-5 shows a hydrophobic region of a molecule?



A 3
B 5
C 1
D 2
E 4

25 **Which of the following statements about healthy living organisms are correct?**

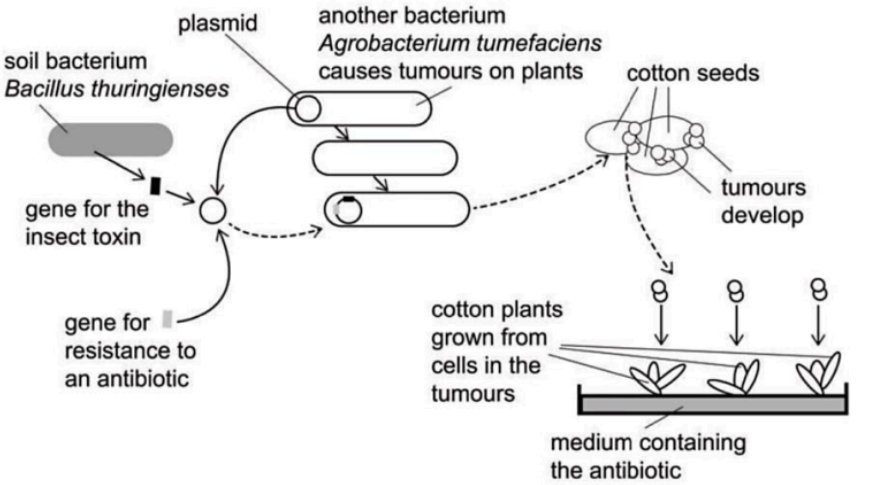
1) They are made up of one or more cells.
2) They have DNA as the genetic material.
3) They use energy to stay alive when their surroundings change.
4) They undergo phases of growth.

A 1, 2 and 3 only
B 2, 3 and 4 only
C 1, 3 and 4 only
D 1, 2, 3 and 4
E 1, 2 and 4 only

26 **The diagram shows how recombinant DNA can be used to make cotton plants produce an insect toxin. The insect toxin kills any insect that can damage the cotton crop.**

What are the TWO functions of the Agrobacterium tumefaciens bacteria in this process?

1) They stimulate cell division in cotton plant seeds.
2) They supply the plasmid vector.
3) They are the source of the gene for the production of the insect toxin.
4) They are the source of the gene for antibiotic resistance.



A 1 and 3 only
B 2 and 4 only
C 2 and 3 only
D 1 and 4 only
E 1 and 2 only

27 **Which one of the structures listed is NOT involved in the reabsorption of water in a healthy human?**

A distal convoluted tubule
B glomerulus
C collecting duct
D proximal convoluted tubule
E loop of Henle

28 **Which of the following statements about bile in the digestive system are correct?**

1) It emulsifies fat globules.
2) It dilutes the contents of the small intestine.
3) It lowers the activation energy of lipase.
4) It helps to reduce the acidity of the contents leaving the stomach.

- A 1, 2 and 3 only
- B 1, 2 and 4 only
- C 1 and 2 only
- D 2 and 3 only
- E 1 and 4 only

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29 **The heart of a developing human fetus normally has a hole in the septum. The septum separates the right atrium and the left atrium.**

Which one of the statements about the circulation in the developing fetus with a hole in the septum is correct?

- A The atrioventricular node will not cause ventricular systole.
- B Blood in the pulmonary artery will go directly to the aorta.
- C Blood in the right atrium may return directly to the vena cava.
- D Blood entering the right atrium can bypass the lungs and go to the rest of the body.
- E The maximum pressure in the aorta is the same as the maximum pressure in the contracting

---

30 **Which row shows three structures found in a healthy human male liver cell, in order of size from largest to smallest?**
[Assume that there are no mutations in the cell.]

row	*structures from largest to smallest*				
1	Y chromosome	→	nucleosome	→	histone
2	nucleosome	→	X chromosome	→	Y chromosome
3	histone	→	nucleosome	→	X chromosome
4	Y chromosome	→	X chromosome	→	histone
5	X chromosome	→	histone	→	nucleosome

- A row 2
- B row 4
- C row 5
- D row 3
- E row 1

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31 **What is the correct order of the following events that occur immediately after acetylcholine binds to postsynaptic receptors of a muscle fibre, causing the muscle to contract?**

1) Ca^{2+} **ions diffuse into the sarcoplasm.**
2) The muscle fibre membrane is depolarised.
3) The myosin binding site on the actin filament is uncovered.

- **A** 2, 3, 1
- **B** 3, 2, 1
- **C** 1, 3, 2
- **D** 1, 2, 3
- **E** 2, 1, 3

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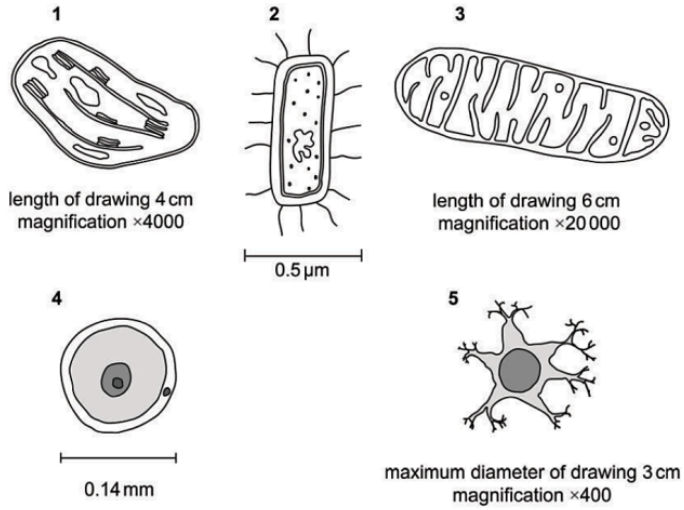
32 **Which of the following is/are features of HIV?**

1) It has a capsid.
2) It contains DNA.
3) It has ribosomes.

- **A** 1 and 2 only
- **B** 2 and 3 only
- **C** 3 only
- **D** 1 only
- **E** 2 only

---

33 **The diagrams show five different microscopic structures.**
The structures are not drawn to the same scale.
Which of these structures is the smallest?



A 1
B 5
C 4
D 3
E 2

---

34 **Which of the following healthy cells contain circular DNA?**

1) Escherichia coli
2) Saccharomyces cerevisiae (yeast)
3) human liver cell

A 1, 2 and 3
B 1 only
C 2 only
D 1 and 2 only
E 2 and 3 only

---

35 **The occurrence of which of the following could allow you to distinguish between the processes of DNA replication and transcription?**
1) The breaking of hydrogen bonds.
2) The formation of hydrogen bonds.
3) The formation of phosphodiester bonds.

A none of them
B 1 only
C 1 and 2 only
D 3 only
E 2 only

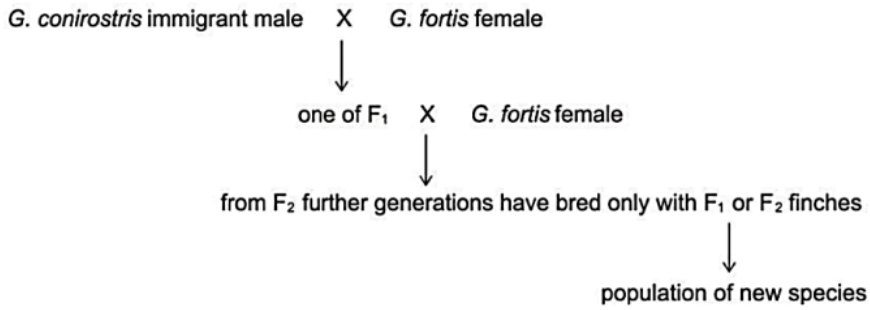
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36 **In 1981, an immature male finch (Geospiza conirostris) arrived on an island in the Galapagos. This male finch was similar to finches of the species (G. fortis) living on the island. However, G. conirostris was 70% larger than G. fortis and had a distinctly different song.**

The diagram shows how, after observing further generations, a new species has evolved.

The success of the new species is due to its larger bill and body size and its unique song. Which of the following terms is/are illustrated by this information?

1) sympatric speciation
2) reproductive isolation
3) post-zygotic isolation



A 3 only
B 2 and 3 only
C 1 and 2 only
D 1 only
E 2 only

37 **A single base mutation occurs in a gene.**

Which of the following is/are possible effects on the protein produced as a result of this mutation?

1) The protein has an altered tertiary structure.
2) The protein is shorter in length.
3) The protein is unchanged.

A 1, 2 and 3
B 1 and 2 only
C 1 and 3 only
D 1 only
E 2 and 3 only

38 **Which one of the following is an example of catabolism in healthy human cells?**

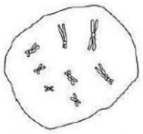
A formation of RuBisCo
B attachment of tRNA to mRNA
C ATP made during glycolysis
D replication of DNA
E oxidation of NADH

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39 **The diagrams show animal cells from organisms that sexually reproduce. Each diagram shows a single cell containing chromosomes during cell division.**
Which one of the following diagrams has a correct description for a cell from an organism with a haploid number of 4?

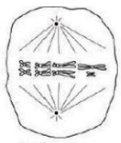
[Assume that the sex of the organism is inherited in the same way as in humans.]

A



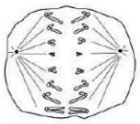
Cell from a male organism with 16 chromatids during prophase of meiosis.

B



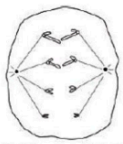
Cell from a female organism with 8 chromosomes during metaphase of mitosis.

C



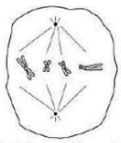
Cell from a male organism with a diploid number of 8 during anaphase of first division of meiosis.

D



Cell has a diploid number of 8 showing the chromosomes during anaphase of mitosis.

E



Cell from a female organism with 4 chromatids during metaphase of mitosis.

A E
B B
C A
D C
E D

---

40 **Which one of the following will be caused by an appropriate stimulus of a rod cell in the retina of a healthy human eye?**

A an opsin and retinal will form rhodopsin
B rhodopsin will form an opsin and retinal
C an opsin and retinol will form rhodopsin
D rhodopsin will form opsonin and retinol
E rhodopsin will form an opsin and retinol

CHEMISTRY

41 **What does the formula Br_2 represent?**

A a molecule of the compound bromine
B a compound of the element bromine
C two bromide ions
D two separate atoms of the element bromine
E a molecule of the element bromine

---

42 **Sucrose, $C_{12}H_{22}O_{11}$, is added to water at 20°C until no more sucrose will dissolve. Four statements are made about sucrose and the solution that is produced:**

1) A saturated solution of sucrose is produced.
2) The freezing point of the solution is 0°C.
3) Sucrose is a non-polar substance.
4) Sucrose is the solute.

Which two statements are correct?

A 3 and 1 only
B 2 and 3 only
C 1 and 2 only
D 1 and 4 only
E 3 and 4 only

---

43 **Which of the following is the equation for the reaction of magnesium with excess cold water?**

A $2Mg + 2H_2O \rightarrow 2MgOH + H_2CMg + H_2O$
B $Mg + 2H_2O \rightarrow Mg(OH)_2 + H_2$
C $2Mg + H_2O \rightarrow Mg_2O + H_2$
D $Mg + H_2O \rightarrow Mg(OH)_2 + H_2$
E $MgO + H_2$

---

44 **Which of the following substances has the weakest overall intermolecular forces?**

[atomic numbers: H = 1; C = 6; N = 7; O = 8; F = 9]

A H_2O
B CH_4
C NH_3
D HF
E CO_2

45 **An atom has atomic number x and a mass number of 2x + 6 How many neutrons are in the nucleus of this atom?**

- A x - 3
- B x - 6
- C x + 6
- D x + 3
- E 6

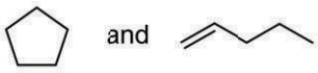
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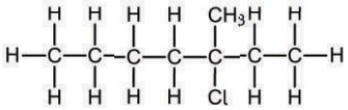
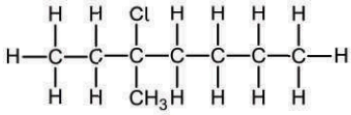
46 **In which of the following pairs of species does the vanadium, V, have the same oxidation state? –**

- A V_2O_5 and VO^{2+}
- B VO_2 and V_2O_5
- C VO_2 and VO_3^-
- D VCl_4 and VO^{2+}
- E VCl_4 and VO_3^-

---

47 **Which of the following pairs of molecules are structural isomers?**

1  and

2  and 

3 $CH_3CH_2CH_2CN$ and $CH_2{=}C{=}CHCH_2NH_2$

- A 3 only
- B 1 and 3 only
- C 2 only
- D 2 and 3 only
- E 1, 2 and 3

---

48 **Which of the following functional groups is present in cysteine?**



cysteine

A thiol
B amide
C ester
D alcohol
E ketone

---

49 **P, Q and R represent substances involved in a gaseous reaction. The equilibrium constant (K_c) and the sign of the enthalpy change for the reaction are:**

$$K_c = \frac{[P]^2}{[Q][R]^3} \quad \Delta H \text{ is negative}$$

Assuming that all other conditions remain constant, a change in which factor results in an increase of the value of the equilibrium constant, K_c?

A an increase in pressure
B a decrease in pressure
C an increase in temperature
D a decrease in temperature
E use of a suitable catalyst

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50 **Which of the following molecules has a permanent overall dipole moment?**

[C is in Group IV; N and P are in Group V; O and S are in Group VI; F and Cl are in Group VII]

A PCl_5
B CCl_4
C CO_2
D SF_6
E NF_3

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51 **X and Y are acidic solutions.**
X has a pH of 2 and Y has a pH of 4
Which of the following statements about the hydrogen ion concentrations of X and Y is correct?

- A X has a hydrogen ion concentration 2 times greater than Y.
- B Y has a hydrogen ion concentration 100 times greater than X.
- C Y has a hydrogen ion concentration 2 times greater than X.
- D X has a hydrogen ion concentration 100 times greater than Y.
- E X has a hydrogen ion concentration 4 times greater than Y.

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52 **40 cm^3 of a solution of sodium hydroxide is exactly neutralised by 25 cm^3 of 0.40 mol L–1 sulfuric acid.**

$$2\mathrm{NaOH} + \mathrm{H_2SO_4} \rightarrow \mathrm{Na_2SO_4} + 2\mathrm{H_2O}$$

What is the concentration, in g L^{-1}, of the sodium hydroxide solution? [M_r value: NaOH = 40] r –1

- A $5\,\mathrm{g\,L^{-1}}$
- B $0.5\,\mathrm{g\,L^{-1}}$
- C $20\,\mathrm{g\,L^{-1}}$
- D $10\,\mathrm{g\,L^{-1}}$
- E $0.25\,\mathrm{g\,L^{-1}}$

PHYSICS AND MATHEMATICS

53 **Given that:**
$8^{2x+3} \times \frac{1}{4^{3x}} = 2^{x+3}$

What is the value of x?

A $\frac{3}{2}$
B 0
C $\frac{1}{2}$
D 3
E 6

54 **Which of the following is equal to**

$\frac{2}{2+\sqrt{3}}$

A $4 - 2\sqrt{3}$
B $\frac{4}{7} + \frac{2\sqrt{3}}{7}$
C $\frac{4}{7} - \frac{2\sqrt{3}}{7}$
D $4 + 2\sqrt{3}$
E $1 - \frac{\sqrt{3}}{2}$

55 **What are the coordinates of the turning point of the graph of the quadratic equation**

$y = 2x^2 + 5x - 2$

A $\left(\frac{5}{4}, -\frac{41}{16}\right)$
B $\left(-\frac{5}{2}, -\frac{41}{8}\right)$
C $\left(-\frac{5}{4}, -\frac{41}{8}\right)$
D $\left(-\frac{5}{4}, -\frac{41}{16}\right)$
E $\left(-\frac{5}{2}, -\frac{41}{16}\right)$

56 **39 male students and 36 female students were asked how many meals they had eaten in the school cafeteria during the first week of the term. The results are shown in the table:**

What is the value of x?

	male	female	all students
mean number of meals eaten	2	x	$3\frac{1}{5}$

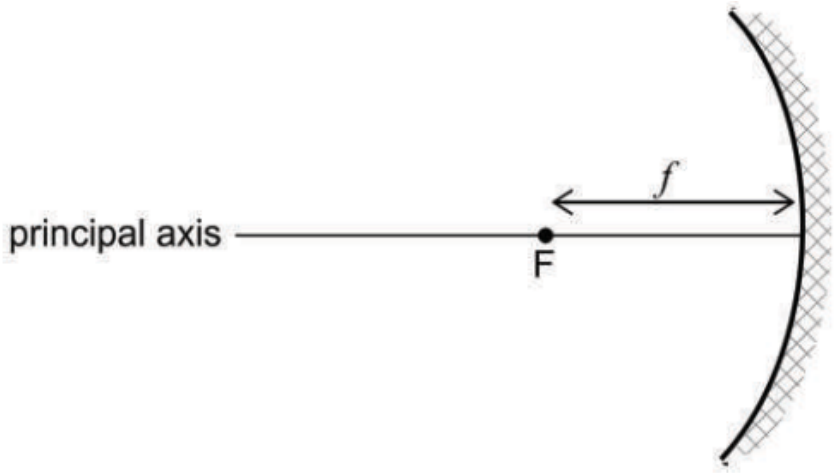
A $4\frac{2}{5}$
B $3\frac{4}{5}$
C $4\frac{1}{2}$
D $2\frac{3}{5}$
E $4\frac{2}{3}$

57 **The diagram represents a concave mirror, where F is the principal focus and f is the focal length.**

The mirror is used to produce an image of an object.

Which of the following statements are correct?
[Assume the mirror is parabolic.]

1. Incident rays travelling parallel to the principal axis always pass through F after reflection.
2. Incident rays passing through F always travel parallel to the principal axis after reflection.
3. The image formed is always inverted.
4. The image formed is always real.
5. The image formed is always larger than the object.



A 1 and 3 only
B 2 and 4 only
C 1, 3 and 4 only
D 1 and 2 only
E 3, 4 and 5 only

58 **A beaker contains 1000 g of a liquid that is stirred at its boiling point.**
A 100 W electric heater is completely immersed in the liquid.
The heater provides the liquid with thermal energy, and 200 g of the liquid changes to vapour in 1600 s.

What is the specific latent heat of evaporation of the liquid?
[Assume that no thermal energy is transferred to or from the surroundings, and no vapour condenses.]

A 3200 J / g
B 16 000 J / g
C 800 J / g
D 160 J / g
E 12.5 J / g

ANSWER SHEET

Fill in one box per question, as in the exam. The key is on the next page.

1	A B C D E	20	A B C D E	40	A B C D E
2	A B C D E	21	A B C D E	41	A B C D E
3	A B C D E	22	A B C D E	42	A B C D E
4	A B C D E	23	A B C D E	43	A B C D E
5	A B C D E	25	A B C D E	44	A B C D E
6	A B C D E	26	A B C D E	45	A B C D E
7	A B C D E	27	A B C D E	46	A B C D E
8	A B C D E	28	A B C D E	47	A B C D E
9	A B C D E	29	A B C D E	48	A B C D E
10	A B C D E	30	A B C D E	49	A B C D E
11	A B C D E	31	A B C D E	50	A B C D E
12	A B C D E	32	A B C D E	51	A B C D E
13	A B C D E	33	A B C D E	52	A B C D E
14	A B C D E	34	A B C D E	53	A B C D E
15	A B C D E	35	A B C D E	54	A B C D E
16	A B C D E	36	A B C D E	55	A B C D E
17	A B C D E	37	A B C D E	56	A B C D E
18	A B C D E	38	A B C D E	57	A B C D E
19	A B C D E	39	A B C D E	58	A B C D E

ANSWER KEY

Valid for this TestBuddy version: the answers are in a different order from the official paper.

1	D	20	C	40	B
2	C	21	B	41	E
3	E	22	E	42	D
4	A	23	A	43	B
5	C	25	D	44	B
6	A	26	E	45	C
7	C	27	B	46	D
8	C	28	B	47	B
9	B	29	D	48	A
10	E	30	E	49	D
11	B	31	E	50	E
12	E	32	D	51	D
13	B	33	E	52	C
14	B	34	A	53	E
15	C	35	A	54	A
16	B	36	E	55	C
17	E	37	A	56	C
18	E	38	E	57	D
19	C	39	C	58	C

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