PROVE UFFICIALI DEGLI ANNI PASSATI

IMAT

2013

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 2013, 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

Questions	28 questions
Biology	14 questions
Chemistry	5 questions
Physics and Mathematics	7 questions
Total	**54 questions**

This version has **54 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.

QUESTIONS

1 **Ever since Uranus was discovered, astronomers have thought there might be more planets in the Solar System. Because of small deviations in the orbits of Uranus and Neptune - deviations which would occur if another planet existed - some astronomers think there must be an undiscovered planet - Planet X. But these deviations cannot tell us whether Planet X exists, because they would occur if the orbits had been wrongly predicted. Since Uranus and Neptune take many decades to circle the sun, astronomers rely on old data to calculate their orbits. As this is likely to be inaccurate, the calculated orbits are probably wrong, and so Uranus and Neptune will deviate from them even if there is no Planet X.**

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

- A Astronomers are right to think that there must be an undiscovered planet.
- B The calculations of the orbits of Uranus and Neptune are probably wrong.
- C Uranus and Neptune will deviate from the predicted orbits whether or not Planet X exists.
- D The deviations in the orbits of Uranus and Neptune cannot tell us whether Planet X exists.
- E The use of old and inaccurate data indicates that Planet X cannot exist.

2 **Coffee granules are available in two jar sizes, regular and large. The regular jar contains 250 grams and costs €4.50. The large jar is 60% bigger, containing 400 grams, but at €6.30 costs only 40% more than the regular jar.**

By how much per kilogram is the large jar of coffee better value for money than the regular jar?

- A 6
- B 3.15
- C 2.25
- D 0.9
- E 3.6

3 **According to a recent analysis of university entrance records, you are more likely to go to university if your name is John than if it is Wayne. Therefore, if you want your child to go to university, you are better off calling him John than Wayne.**

Which one of the following is the best statement of the flaw in the argument above?

- A It confuses a necessary condition with a sufficient one.
- B It draws a general conclusion from specific evidence.
- C It confuses a correlation with a cause.
- D It jumps to a conclusion without any evidence.
- E It fails to consider other names than Wayne or John.

4 **Horrific images of the earthquake in Haiti were seen immediately all over the world, and by the next day the full extent of the damage was seen by the entire world. Clearly, the main problem was moving aid from the airport to distant areas, and with the roads largely blocked the only practical method was to use helicopters. The great nations of the world should be ashamed that food was not getting to the people who needed it, and that even a week later their relief still depended on the ability of courageous and skillful drivers to reach them in trucks.**

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

- A There was enough food in Haiti to supply all the people in the weeks after the earthquake.
- B The relief agencies were able to import trucks to Haiti but not helicopters.
- C The images failed to prompt the great nations of the world into relief operations after the earthquake.
- D The people of Haiti were able to clear their roads within a week of the earthquake.
- E The great nations of the world had helicopters at their disposal which could reach Haiti within a week.

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5 **The pasta that I buy in the local supermarket usually costs €1.60 per packet. This week the packet is marked '€0.20 off normal price'.**

In addition the following sign is on display '10% off all bills when you spend €10 or more'. Assuming that I spend over €10 altogether, how much will the packet of cereal cost?

- A 1.24
- B 1.26
- C 1.12
- D 1.3
- E 1.18

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6 **There is an increasing number of historical or significant buildings in the UK which are said to be 'At Risk'. Without a change in the law most of these buildings are doomed to crumble into the ground. This is because these buildings are no longer structurally sound. The exisiting strict renovation laws mean that they are too expensive or impractical for private individuals or developers to renovate or repair. There are certainly people out there who would be willing to maintain these buildings if they could use more modern and less expensive techniques and materials. Surely it is better to sacrifice some of the original building's character rather than lose the entire structure.**

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

- A Historians can learn more from buildings which have not been modernised by modern developers.
- B A change in the law is needed if we hope to preserve more 'At Risk' buildings.
- C Existing laws make 'At Risk' buildings too expensive for most developers.
- D At Risk' buildings need to be renovated according to strict rules.
- E There is nothing wrong with changing the character of historic buildings.

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7 **A nationwide survey showed that the majority of people would not be willing to give up their car in favour of public transport. However, in a recent survey of people living in an area with heavy traffic problems, 76% stated that they would prefer to travel to work by public transport if the system was made more reliable. This shows that the previous findings were wrong. We should, therefore, restrict car use and start a programme of improving the nation's public transport network as soon as possible.**

Which one of the following is the best statement of the flaw in the argument above?

A The counter arguments are not explained in detail.
B It does not consider the 24% who would not prefer to use public transport.
C It fails to specify which types of public transport are to be improved.
D The statistic presented may not be representative of the whole population.
E It fails to explain how the public transport system can be improved.

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8 **The low level of literacy among science undergraduates is an issue across all universities. One of the biggest problems is that pupils in school spend more time perfecting their SMS text messaging and emailing skills than they do writing grammatically correct pieces of literature. It is important to get across to undergraduates that good writing matters. Employers take on scientists believing they can communicate their findings fluently and accurately. We need to deliver science graduates with these skills.**

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

A Students must be helped to recognise the importance of good literacy skills.
B Students do not concentrate properly in lessons in school.
C Education is failing those who leave with poor writing skills.
D Employment often depends on good ability in literacy.
E Many science graduates are unable to write in a grammatically correct way.

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9 **Stephen is currently involved in a long distance charity walk from Alphcaster to Omegham. He left Alphcaster 9 days ago and has just completed 60% of his journey.**

He hopes to complete 60% of the rest of the walk during the next 4 days. This will leave him just 60 miles from Omegham, which he aims to complete in a further 2 days.

How far is it from Alphcaster to Omegham?

A 450 miles
B 250 miles
C 225 miles
D 300 miles
E 375 miles

---

10 **A significant social trend in the 20th century was for people to move away from their place of birth in order to access education and work. This gave individuals more opportunities and helped the economy by producing mobility within the workforce. The negative side of this is now being felt as more and more elderly people face the problems of old age without family members nearby to care for them. This has negative effects on the economy as well as on the individual, as more and more state funding for care is needed.**

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

- (A) Elderly people are expecting the state to provide care for them rather than relying on their children.
- (B) People should make caring for their elderly parents a priority over choice of work opportunities.
- (C) The benefits of a mobile workforce have to be compared with the costs to elderly people and the economy.
- (D) The state should provide care for elderly people to make mobility of the workforce possible.
- (E) People should try to find education and work close to their place of birth.

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11 **It has recently been suggested that some degrees can be completed in two years instead of the traditional three years. But staff teaching engineering and medicine at degree level say that the current first year mostly involves getting students up to a common level of maths and physics, which in the past was achieved by high school teaching. By the end of the second year few students have reached the level of attainment that students did 40 years ago. Two year degrees are not realistic - certainly not for engineering.**

Which one of the following is an assumption of the argument in the passage above?

- (A) School examinations are easier now than they were 40 years ago.
- (B) Maths and physics are more important elements of engineering than they were 40 years ago.
- (C) Engineering students are less motivated than they were 40 years ago.
- (D) Two year degree courses will be more popular with students than three year courses.
- (E) Two year degree courses will have the same amount of teaching per year as three year courses.

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12 **A multi-storey car park has eight levels.**
On the top seven levels there are eight rows of parking. Two of these rows hold 15 cars each whilst the others hold 10 cars each.
On the road level there are two rows holding 15 cars but only four rows holding 10 cars each.
The entry control system counts cars in and out. The system stops admitting cars once 90% of the total capacity is in use.
Four spaces on the road level are reserved for staff parking and these are not available to the public.
What is the maximum number of public cars which can be admitted?

- (A) 626
- (B) 644
- (C) 500
- (D) 630
- (E) 696

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13 **The table below shows the consumer price inflation and unemployment rate for 5 countries:**

A newspaper comparing March to February reported that: 'Unemployment has fallen but there has been a rise in the inflation rate'

Which country is the statement referring to?

Consumer price inflation % rate	March	February
United States	+0.4	+0.3
Japan	+0.2	+0.5
Germany	+0.1	+0.1
France	+0.3	0.0
UK	+0.2	+0.5
Unemployed % rate	March	February
United States	5.9	6.1
Japan	3.0	3.0
Germany	9.2	9.3
France	12.6	12.6
UK	9.1	9.2

A Japan
B France
C Germany
D United States
E UK

15 **At a society meeting, 1000 people are entitled to vote in the elections for Chairperson with a one- person-one-vote system. The election rules state if no candidate obtains more than 50% of the votes cast in the first ballot, a second ballot must be held between the top two candidates. 350 votes were cast for a particular candidate in the first ballot. Then a second ballot took place.**

Under these circumstances which one of the following is possible?

A The candidate either won the election or came second
B The candidate definitely won the election
C The candidate came second or third, but did not win
D The candidate came third
E The candidate won the election, came second, or came third

16 **A safe has external dimensions as follows:**

Width 48cm
Depth 44cm
Height 52cm

The entire safe is made of steel 4cm thick except the base which is 8cm thick.
What are the internal dimensions of the base of the safe?

A 40cm x 32cm
B 36cm x 36cm
C 40cm x 36cm
D 44cm x 40cm
E 40cm x 40cm

---

18 **A study on identical twins concluded that genes contribute roughly half of the attributes we need to be happy. People often find such studies scary, seeing something sinister about us being mere puppets of our biology. However, put in non-scientific terms, it sounds like common sense. Parents talk about how their children had different personality traits from a very young age. Perhaps it's nicer to think this is caused by something 'fluffy' like a soul - but even if that were true, why is that more reassuring than the thought that genes are responsible? Either way, you're born as you are.**

Which one of the following statements is best supported as the conclusion of the passage above?

A The person you are at birth is the person you will be throughout your life.
B Whether or not you are happy in life is not something over which you yourself have any control.
C Roughly half of what we need to be happy is decided by our genetic make up.
D Whether or not you are happy in life is either determined by your soul or your genes.
E We may as well accept the idea that our potential for happiness in life is to some extent decided at birth.

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19 **The table below shows the winning time for the men's 200m run in the Olympic Games since 1900, when the event was first held, until 1988.**

What is the longest number of years for which the Olympic record stood unbroken?

year	seconds	year	seconds
1900	22.2	1948	21.1
1904	21.6	1952	20.81
1908	22.6	1956	20.75
1912	27.1	1960	20.62
1916	*	1964	20.36
1920	22.0	1968	19.83
1924	21.6	1972	20.00
1928	21.8	1976	20.23
1932	21.2	1980	20.19
1936	20.7	1984	19.80
1940	*	1988	19.75
1944	*	-	-

*** Olympics not held in these years.**

A 24
B 6
C 20
D 16
E 28

---

20 **Any company that wishes to sell a new drug must provide the government with details of research about its safety and possible side effects. At present, this information is confidential, but there are plans to make it available to the public. While patients are surely entitled to more information about the drugs they are prescribed, this will also inevitably make public vital details about the ingredients of certain drugs and how they are manufactured. Drug companies are naturally reluctant to release this information to their competitors. Therefore, through fear of imitators, drug companies will no longer introduce new and important drugs into the country.**

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

A The drug industry is a very competitive business and secrecy is vital if companies are to survive.
B There are sufficient drugs already on the market and so there is no necessity to introduce new ones.
C People are better informed about the side effects of drugs abroad than they are in this country.
D Strong patent laws prevent companies from using the information to create rival drugs.
E People may be reluctant to use certain drugs when they have fuller information about them.

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21 **After looking at interviews conducted with a number of adult learners, our research suggested that the learners who felt they were most successful were all highly motivated. We noticed that early success had heightened motivation in some cases and saw that both success and motivation may be due to a special aptitude for learning. We also noticed that many of those who felt they were most motivated were also learning in favourable conditions or for fun, which meant they may have become motivated since starting their classes. Though these conditions seemed persuasive, the results led us to the same conclusion.**

It's impossible to learn anything without motivation.

Which one of the following is NOT a flaw in the above argument?

- A The research does not establish that there are no successful learners who lacked motivation.
- B The research is only concerned with adult learners.
- C It assumes that those who felt they were successful actually were.
- D It assumes that in order to be motivated you have to have a special aptitude for learning.
- E It assumes that those who felt they were motivated actually were.

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22 **Many people believe that foreign travel broadens the mind and that there is some inherent benefit in spending some time in a culture different from your own. Many students are taking 'gap' years where they spend time in another country. Whilst this may offer some benefits in terms of confidence and independence, it is wrong to assume that foreign travel alone can provide this. Global travel can have negative impacts on local cultures and the environment. Home country based 'gap' projects are often seen as unglamourous but the benefit of working with different groups and cultures within our own society can be equally rewarding.**

Which one of the following is the main conclusion of the above passage?

- A Foreign travel is not the only way to gain confidence and independence.
- B There is inherent benefit in spending some time abroad.
- C Projects within our own society can be as rewarding as foreign travel.
- D It is important that gap year students consider the impact of their travel on the communities they work in.
- E Foreign gap year projects must have an element of community work for them to be worthwhile.

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23 **My packet of washing powder claims to contain enough powder for 24 washes. This claim is based on using the plastic scoop supplied with the packet and filling it once for each wash.**

Living in a soft water area I find I only need to fill the scoop three-quarters full.
How many washes can I get from this packet?

- A 30
- B 32
- C 18
- D 42
- E 26

---

24 **Two companies have just started a round-the-clock air taxi service between Rome and Milan. They use the same flight path and fly at constant speeds at different altitudes. Planes owned by the company Alpha-Air take off from Rome every 10 minutes and take 90 minutes to reach Milan. Planes owned by the company Beta-Air take off every 5 minutes and take 60 minutes to reach Milan. Captain Johnston, who flies for Beta-Air, takes off from Rome 5 minutes after the previous Alpha-Air flight has departed.**

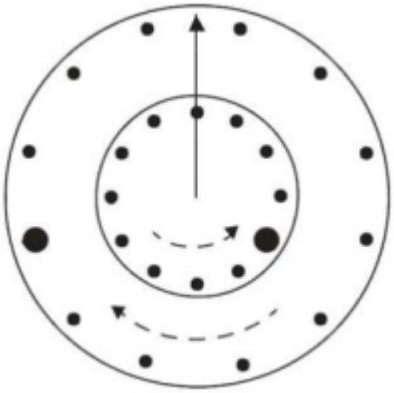
How many Alpha-Air planes (flying from Rome to Milan) will Captain Johnston have passed as he lands in Milan?

A 1
B 2
C 3
D 4
E 0

---

25 **A novelty shop sells a rather unusual clock designed to puzzle users. There is only one hand, which points upwards. It has two faces. The larger hour face rotates clockwise and the smaller minute face rotates anticlockwise. Each face has one big dot, representing 12 o' clock or 0/60 minutes and 11 smaller marks counting one hour or five minute divisions. There are no numbers.**

What time is it when the clock looks as shown in the diagram?



A 8:20
B 3:20
C 8:40
D 3:40
E 9:20

---

26 **The headquarters of the World Health Organisation (WHO) is found in which of these cities?**

A London
B Washington DC
C Rome
D Nairobi
E Geneva

---

27 **A placebo is:**

A a form of mild stimulant
B a type of pain killer
C a sedative
D a form of local anaesthetic
E an inactive drug or treatment

---

28 **Which general famously crossed the Alps with his army?**

A Antony
B Augustus
C Octavius
D Hamilcar
E Hannibal

---

29 **In which modern day country was the Inca civilization centred?**

A Chile
B Brazil
C Ecuador
D Peru
E Bolivia

---

30 **Which one of these did Galileo NOT do?**

A Develop the microscope
B Design an electric battery
C Design a thermometer
D Develop the telescope
E Discover that the movement of a pendulum produces a regular time measurement

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BIOLOGY

31 **A sample of DNA contains 32 % guanine.**

Which answer shows the percentage of thymine in the same sample?

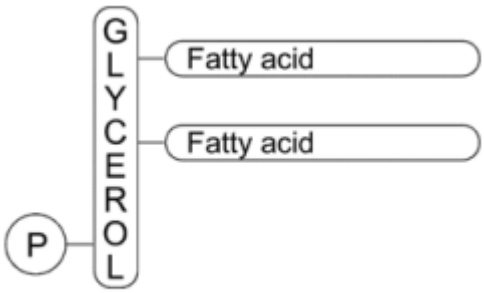
- A 32
- B 18
- C 23
- D 34
- E 24

32 **Which one of the following does not contain amino acids?**

- A Antibodies
- B Amylose
- C Enzymes
- D Cell membranes
- E Viruses

33 **The diagram below shows a phospholipid.**

When this molecule is broken into a phosphate, glycerol and two fatty acids, the number of water molecules released is:



P = phosphate

- A 1
- B 2
- C 0
- D more than 3
- E 3

34 **A liver cell in the metaphase of mitosis can be identified as being eukaryotic because it has:**

1. mitochondria
2. ribosomes
3. a nucleus

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

---

35 **In which of the following stages of mammalian respiration is CO_2 released?**

1. Glycolysis
2. Anaerobic respiration
3. Krebs cycle

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

---

36 **Which one of the following molecules is made in both photosynthesis and respiration?**

A Reduced NADP
B Glucose
C Carbon dioxide
D Oxygen
E ATP

---

37 **Which of the following comes immediately after anaphase in mitosis?**

A Prophase
B Metaphase
C Telophase
D Cytokinesis
E Interphase

---

38 **Which statement about ribosomes is NOT correct?**

A Ribosomes are involved in protein synthesis
B Ribsosomes can carry out transcription
C Ribosomes can be found in the cytoplasm
D Ribosomes can have RNA associated with them
E Ribosomes can be found on rough endoplasmic reticulum (RER)

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39 **A section of one strand of DNA has a base sequence of: ACG-GCT-GGT-TCC Which of the following are correct?**

1. The other DNA strand would include a CGA triplet
2. If adenine always binds with 2 H bonds to its complementary base and guanine with 3 H bonds, then each of these triplets will have a total of 8 H bonds
3. The mRNA sequence transcribed from this DNA sequence would contain 3 uracil bases

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

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40 **The direct product of transcription of recombinant DNA can be:**

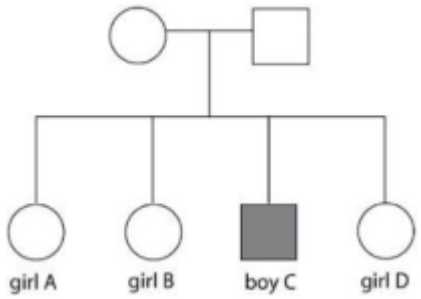
A insulin
B monoclonal antibodies
C mRNA
D the primary structure of a protein
E a replicate DNA molecule

---

41 **The family pedigree shows that boy C has a genetic condition.**

No other member of the family shows the same genetic condition.

Which one of the following could NOT explain why boy C has the condition?



A Sex-linked dominant condition
B Mutation
C Sex-linked recessive condition
D Both parents are carriers
E Autosomal recessive condition

---

42 **The increase in the frequency of one phenotype in a wild population of fish could be due to:**

1. an advantageous mutation.
2. increased reproductive success of individuals with that phenotype.
3. a change in the environment.

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

---

43 **Which one of the following is found below the diaphragm in a human?**

A Heart
B Alveoli
C Liver
D Pulmonary artery
E Pulmonary vein

---

44 **Which one of the following is not involved in defending the body against infection?**

A B cell
B Beta cell
C Antibodies
D T cell
E Phagocyte

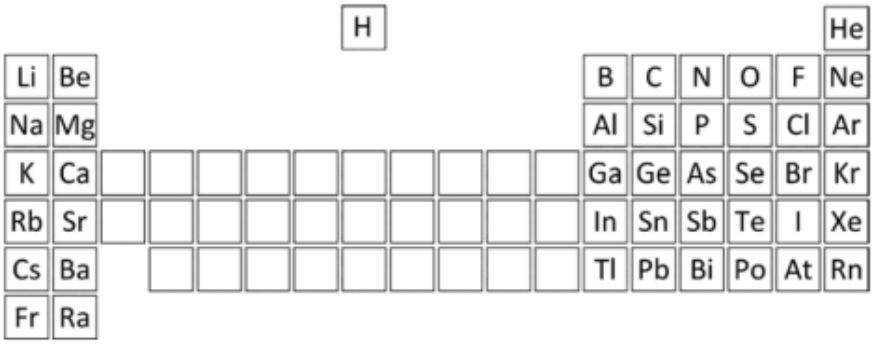
CHEMISTRY

45 **Which name of the following phase changes is NOT correct?**

- A Gas to liquid = Condensation
- B Solid to liquid = Melting
- C Liquid to gas = Evaporation
- D Solid to gas = Sublimation
- E Gas to solid = Freezing

46 **The positions of the main group elements in the Periodic Table are shown below:**

Which one of the following formulae is NOT correct?



- A $CsNO_3$
- B $GaCO3$
- C $Ba\,(HCO_3)_2$
- D SnS_2
- E $BeSO_4$

48 **The following are some compounds of nitrogen:** $NOCl, KNO_2, NO_2, NO_2Cl, Ca\,(NO_3)_2$

What oxidation numbers are shown by nitrogen in these compounds?

- A 4, 5, 6
- B 2, 3, 4, 5
- C 3, 4, 5
- D 3, 4, 5, 6
- E 2, 3, 4, 5, 6

49 **Which of the following are correct about carbon to carbon bonds?**

1. The length of carbon to carbon bonds increases in the order C≡C, C=C, C-C
2. The strength of the C=C bond is less than twice the strength of the C-C bond
3. The carbon atoms are joined by six electrons in the C≡C bond

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

---

52 **Which of the following must be correct about organic isomers?**

1. They have the same molecular formulae
2. Their physical properties are very similar
3. They have different structural formulae

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

---

53 **In the expressions below:**

g = gravitational acceleration;
h = height;
m = mass;
R = electrical resistance;
t = time;
v = velocity;
V = voltage.

Which of the following expressions have units of power?

1. $\frac{mv^2}{2t}$
2. $\frac{V^2}{R}$
3. $\frac{mgh}{t}$

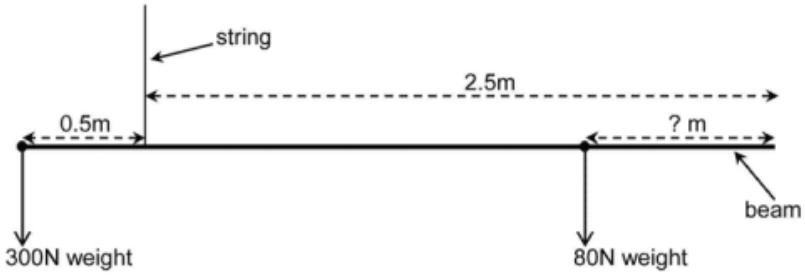
A 1 and 3 only
B 1, 2, and 3
C 2 and 3 only
D 1 and 2 only
E 1 only

54 **A uniform beam, 3.0m long, of weight 100N has a 300N weight placed 0.50m from one end.**

The beam is suspended by a string 1.0m from the same end.

A diagram of the weights placed on the beam is given below:

How far from the other end must a weight of 80N be placed for the beam to be balanced?

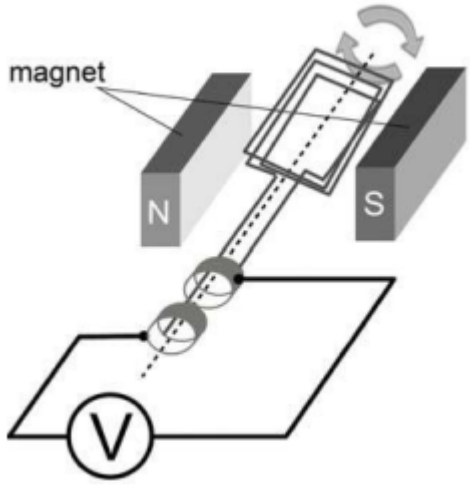


A 1.25m
B 0.125m
C 2.25m
D 0.75m
E 1.875m

55 **In an AC (alternating current) generator, a coil of wire rotates in a magnetic field.**

Which of the following would change the potential difference measured by the voltmeter in the system above?

1. Use more turns of wire in the coil
2. User thicker wire
3. Change the speed of rotation



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

---

56 **A mass is connected to a spring and it vibrates up and down, forming a simple harmonic system.**

Which of the following are correct?

1. The kinetic energy of the mass is at a maximum half way up.
2. The potential energy of the system is at a maximum at the top of the mass's motion.
3. The potential energy of the system is at a maximum at the bottom of the mass's motion.

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

---

58 **Which of the following is the equation of the circle with centre (-1.5, 0.5) and radius 3?**

A $2x^2 - 6x + 2y^2 + 2y - 13 = 0$

B $2x^2 + 6x + 2y^2 - 2y - 14 = 0$

C $2x^2 + 6x + 2y^2 - 2y - 13 = 0$

D $2x^2 - 6x + 2y^2 - 2y - 13 = 0$

E $2x^2 + 6x + 2y^2 - 2y - 23 = 0$

---

59 **What is the set of values for which** $12 - x^2 > 8 \text{ and} 2x + 3 \geq 5$?

A $-1 \leq x < 2$

B $1 \leq x < 2$

C $2 < x$

D $1 \leq x$

E $1 < x \leq 2$

---

60 **The diagram shows a quarter of a circle surrounded by an isosceles triangle. The radius of the circle is r.**

Which one of the following expressions represents the unshaded area?



A $r^2 - \frac{\pi r}{2}$

B $\left(2 - \frac{\pi}{4}\right) r^2$

C $(4 - \pi) r^2$

D $r^2 - \frac{\pi r^2}{2}$

E $\left(1 - \frac{\pi}{4}\right) r^2$

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	**21**	A	B	C	D	E	**39**	A	B	C	D	E
2	A	B	C	D	E	**22**	A	B	C	D	E	**40**	A	B	C	D	E
3	A	B	C	D	E	**23**	A	B	C	D	E	**41**	A	B	C	D	E
4	A	B	C	D	E	**24**	A	B	C	D	E	**42**	A	B	C	D	E
5	A	B	C	D	E	**25**	A	B	C	D	E	**43**	A	B	C	D	E
6	A	B	C	D	E	**26**	A	B	C	D	E	**44**	A	B	C	D	E
7	A	B	C	D	E	**27**	A	B	C	D	E	**45**	A	B	C	D	E
8	A	B	C	D	E	**28**	A	B	C	D	E	**46**	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	**52**	A	B	C	D	E
12	A	B	C	D	E	**32**	A	B	C	D	E	**53**	A	B	C	D	E
13	A	B	C	D	E	**33**	A	B	C	D	E	**54**	A	B	C	D	E
15	A	B	C	D	E	**34**	A	B	C	D	E	**55**	A	B	C	D	E
16	A	B	C	D	E	**35**	A	B	C	D	E	**56**	A	B	C	D	E
18	A	B	C	D	E	**36**	A	B	C	D	E	**58**	A	B	C	D	E
19	A	B	C	D	E	**37**	A	B	C	D	E	**59**	A	B	C	D	E
20	A	B	C	D	E	**38**	A	B	C	D	E	**60**	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	21	D	39	B
2	C	22	C	40	C
3	C	23	B	41	A
4	E	24	C	42	E
5	B	25	C	43	C
6	B	26	E	44	B
7	D	27	E	45	E
8	A	28	E	46	B
9	E	29	D	48	C
10	C	30	B	49	C
11	E	31	B	52	E
12	A	32	B	53	B
13	D	33	C	54	D
15	A	34	B	55	A
16	C	35	E	56	B
18	E	36	E	58	C
19	E	37	C	59	B
20	D	38	B	60	E

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