PROVE UFFICIALI DEGLI ANNI PASSATI

TEST ARCHITETTURA

2013

IN INGLESE

PROVA UFFICIALE MUR

Il testo originale della prova

Ministero dell'Istruzione, dell'Università e della Ricerca

PROVA DI AMMISSIONE AI CORSI DI LAUREA E DI LAUREA MAGISTRALE A CICLO UNICO DIRETTAMENTE FINALIZZATI ALLA FORMAZIONE DI ARCHITETTO

Anno Accademico 2013/2014

Test di Logica e Cultura Generale

1. **Some children have no aptitude for learning foreign languages. Most will neither need nor use languages other than their own in their future careers. It is a mistake to insist on teaching foreign languages to all children in British schools. Businesses suffer not from a shortage of employees with foreign language skills, but from the lack of school leavers with excellent skills in English and arithmetic. Schools should concentrate on teaching skills that will be useful for individuals' careers and that will help to ensure the economic health of the country.**
   Which of the following best expresses the main conclusion of the above argument?
   A) Foreign languages should not be compulsory in British schools
   B) Schools should teach only those skills that will be useful
   C) The economic health of the country depends on what is taught in schools
   D) Very few businesses suffer from the lack of employees with foreign language skills
   E) English and arithmetic are the most important skills for school leavers to possess

2. **We should not reject plans to build new nuclear power stations, because they are "greener" than conventional coal-fired power stations. However, we should ensure that we build them in such a way as to minimise other environmental problems. For example, the nuclear industry in France is already killing billions of fish every year. Coastal power plants using cooling systems that extract water from the sea are to blame for the destruction, as thousands of very small fish and billions of eggs are sucked into the plants. The impact can be so severe in the worst affected regions of the seas around France that death rates are equivalent to half the commercial catch for some species.**
   Which one of the following, if true, would most strengthen the argument in the passage?
   A) The damage to fish populations can be avoided by alternative cooling systems
   B) Nuclear power generates less polluting gas than power generated by fossil fuels
   C) Overfishing, which has caused big declines in fish stocks, is now well controlled
   D) Most fish eggs do not develop into adult fish
   E) Fishermen are now catching different species of fish which are popular with consumers

3. **In his press release, Mr Smith has accepted that he should resign from Parliament if it were proved that he had both "falsified his expense claims" and "lost the confidence of his constituents". Newspaper A published detailed allegations about his expense forms which the police were investigating. Newspaper B had taken an opinion poll of his constituents which showed that over 60% of them had no confidence in him. Newspaper C says "Resign Mr Smith, Resign".**
   Which one of the following is the best statement of the flaw in Newspaper C's argument?
   A) Allegations and police investigations do not constitute proof
   B) Mr Smith has not lost the confidence of all of his constituents
   C) Newspapers are not the best judges of whether a politician should resign
   D) The Newspapers A and B give conflicting accounts
   E) Opinion polls are not to be believed

4. In spite of well-planned media campaigns to persuade people that it is good to buy locally-sourced seasonal vegetables, customers still expect their supermarkets to stock a wide range of vegetables and fruit all year round. Food miles (the distance and cost involved in importing fruit and vegetables from abroad) do not seem to influence shoppers' choices.
Which one of the following statements is totally supported by the passage above?

A) Contrary to expectations, the media campaigns have had little impact on shoppers
B) Housewives have had too much choice in supermarkets for far too long
C) The local farming economy continues to suffer
D) Shoppers have become more demanding about the food they want
E) Carbon emissions are unlikely to decrease any time soon

5. Which terms must be substituted for the numbers in the following text to make the text logically complete?
"There was a rosy-cheeked and blond-haired youth who _____(1)_____ a cape glowing with sun shaped embroidery, and with his hand stretched out he offered a gift like those brought by the Three Wise Men – our dining companion most likely wanted to inform everyone of his ___(2)____ condition, of his inclination towards luxury and ____(3)____ "

A) (1) flaunted; (2) affluent; (3) lavishness
B) (1) concealed; (2) wealthy; (3) greed
C) (1) wrapped; (2) destitute; (3) magnanimity
D) (1) hid; (2) comfortable; (3) munificence
E) (1) showed off; (2) poor; (3) parsimony

6. Which is the only pair of words that logically completes the following verbal equation:
x : Individual = Unstable : y

A) x = Weak-willed y = Gas
B) x = Stable y = Benzoate
C) x = Adamant y = Solution
D) x = Strong-willed y = Solvent
E) x = Self-centred y = Air

7. Which organ of the body is affected by glaucoma?

A) Eye
B) Heart
C) Ear
D) Liver
E) Stomach

8. Which words must be substituted for the numbers in the following text to make the sentence logically complete?
"People __(1)__ me because I highlighted the fact that nobody __(2)__ me when I was nominated for the position"

A) (1) derided; (2) congratulated
B) (1) belittled; (2) saluted
C) (1) mocked; (2) complimented
D) (1) over-estimated; (2) rejoiced
E) (1) over-whelmed; (2) contacted

9. Which one of these pairs of countries recently (in 2007) entered the European Union?

A) Bulgaria and Romania
B) Slovakia and the Czech Republic
C) Turkey and Albania
D) Montenegro and Malta
E) Luxembourg and Slovenia

10. Which of the following is the largest of the primates of Central Africa?

A) Gorilla
B) Orang-utan
C) Chimpanzee
D) Gibbon
E) Baboon

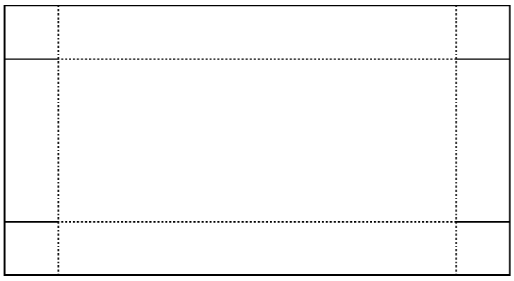
11. The Mexican archaeological site of "Chichen Itza" was built by which civilization?

A) Mayan
B) Aztec
C) Incan
D) Quechua
E) Guarani

12. The operas *"Don Giovanni"* and *"The Magic Flute"* were written by which composer?

A) Mozart
B) Puccini
C) Verdi
D) Wagner
E) Donizetti

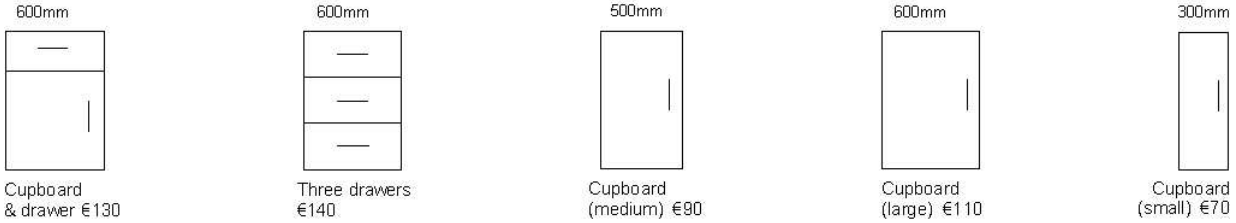
13. By cutting along the unbroken lines, then folding along the dotted lines and gluing the flaps, a sheet of card can be used to make an open box without a lid.



The sheet measures approximately 30 cm by 21 cm. What is the approximate capacity of such a box made from a sheet of card, with a depth of 5 cm?

A) 1100 cm^3
B) 2000 cm^3
C) 2100 cm^3
D) 2200 cm^3
E) 3150 cm^3

14. Maria is refitting her kitchen and wishes to put cupboards along one wall and include at least two drawers. The wall is 3 metres long and she wants to exactly fill the length of the wall. The following cupboard styles are available in the kitchen catalogue:



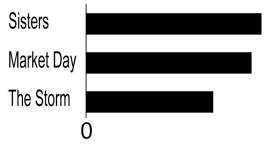
What is the cheapest combination she can install along the entire wall?

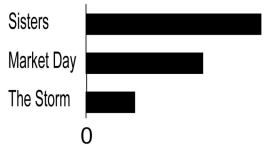
A) € 580
B) € 540
C) € 590
D) € 650
E) € 680

15. Ten years ago Peter inherited three old paintings. He had them valued then and he has just had them valued again, as shown in the table below:

Painting	*Value ten years ago*	*Value now*
Sisters	**€ 5000**	**€ 9000**
Market Day	**€ 3600**	**€ 6300**
The Storm	**€ 2000**	**€ 3200**

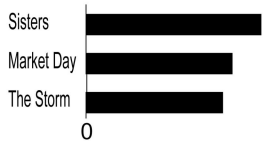
Which one of the following bar charts correctly compares the PERCENTAGE increases in value of the paintings since they were valued ten years ago?

A)


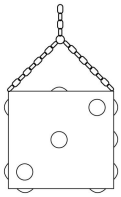
B)


C)

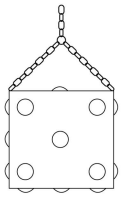

D)

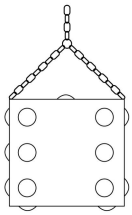

E)


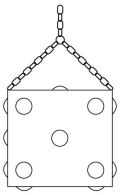
16. In the foyer of a hotel there is a giant die that revolves anti-clockwise (as viewed from below) about a central vertical axis. The spots on the die are raised from the surface of each face. The die is conventional (i.e. opposite faces add up to 7).
When viewed side-on from one direction the die appears as follows:

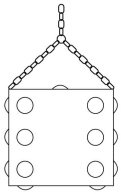


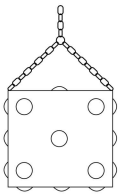
Which one of the following is its appearance from the same direction after it has turned through one quarter of a revolution?

A) 

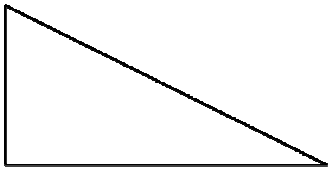
B) 

C) 

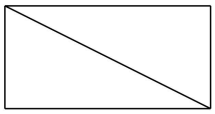
D) 

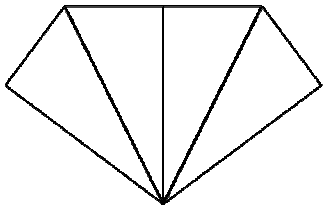
E) 

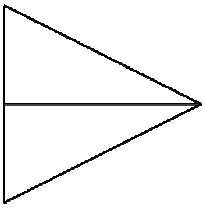
17. A magician has folded a very thin piece of paper so that it appears to the audience as a right angled triangle with the base twice the size of the vertical.

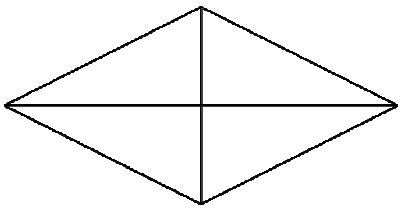


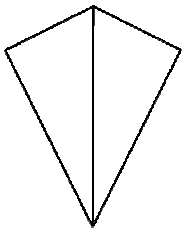
Which one of the following shapes could NOT have been produced by unfolding the paper?

A) 

B) 

C) 

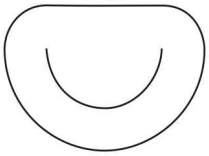
D) 

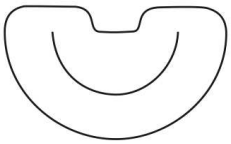
E) 

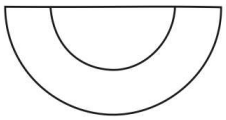
18. A dockside crane with a fixed arm runs along a semi-circular track. It can rotate in a full circle, run along the track and move its carrying hook in and out.
In the diagrams below the inside line represents the track along which the crane runs and the outside line represents the extent of its reach.
Which one of the following diagrams could show the maximum extent of its reach?

A) 

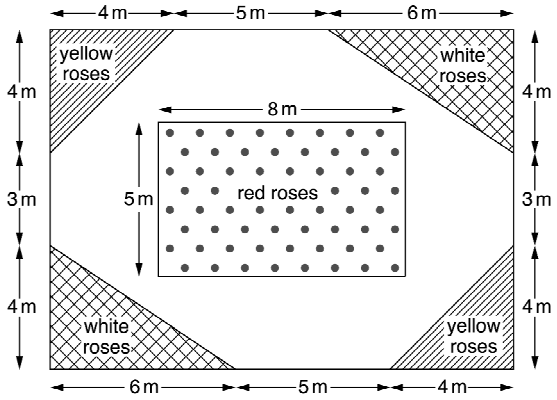
B) 

C) 

D) 

E) 

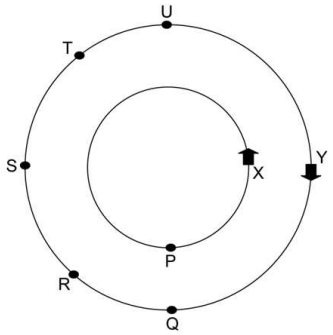
19. This is a plan of a rose garden:



The beds were planted with one rose bush per square metre of area.
According to the plan above, what percentage of the rose bushes produce WHITE roses?

A) 30%
B) 16%
C) 20%
D) 24%
E) 40%

20. Claire and Hilary regularly jog around circular tracks in a park. Claire (X) jogs around the inside track and Hilary (Y) in the opposite direction around the outer track which is twice as far around. Claire jogs at 3 m/s and Hilary at 4 m/s.



If they both start at the side of the track as shown and Claire has reached point P on her first lap, where has Hilary reached?

A) Point S
B) Point Q
C) Point R
D) Point T
E) Point U

Passage 1
Wren's baroque vision

Above all, the baroque city was intended to impress with monumental buildings, magnificent palaces and perspective used to focus attention on majestic views along broad, straight avenues. Symmetry, with a classical sense of balance and regularity, was a defining characteristic.
Although the most flamboyant expressions of the baroque movement were built later – at Versailles, for example, Karlsruhe and St Petersburg – its principles were firmly established at the time of Wren's study tour in France, and an intention to impress is certainly evident in the plan for rebuilding London that Wren submitted to Charles II.
The plan essentially divided London into two parts: a western section consisting of rectangular blocks, and an eastern section of polygonal squares joined by streets radiating from each. These broadly disparate parts were linked by two grand thoroughfares angled across the plan to meet in the form of an arrowhead at the site of St Paul's. There were several piazzas, merchant shipping quays, and also a Grand Terrace along the Thames with adjacent public halls.
On paper, Wren's plan for London offered an impressive city – fit for a king even though it lacked a palace. But he must have known the scheme was irrelevant to the needs of the City. A.E.J. Morris describes it as 'an overnight exercise based on a superficial use of continental Renaissance *planmotifs'*, which is perhaps a little unkind, though it bolsters Morris's suggestion that the plan may not have been seriously intended at all, but was simply a pre-emptive strike on the part of an ambitious though untried architect who was keen to establish his claim to a major share of the rebuilding work. If so, the overnight exercise certainly paid off. Wren became a member of the six-man commission formed to advise and oversee the rebuilding programme; he was appointed Surveyor-General in 1669, given the commission to design the new St Paul's and sixty other City churches, as well as almost all the worthwhile architectural work of the period.
Whatever its conceptual attributes, Wren's plan failed from a practical point of view in its total disregard for the topography of London. His new city was designed as though it occupied a flat plain, whereas in fact the site undulates considerably (even more so then than now), with hills on either side of both the Fleet and the Walbrook tributaries of the Thames. The rise and fall of these hills would have obliterated the magnificent perspective vistas that the plan promised, as well as distorting the proposed arrangement of neat blocks, tidy squares and radiating streets. Wren's baroque vision could never have existed in reality. In point of fact there was never much chance that it would.
Quite apart from the practical difficulties of wrapping a two dimensional plan over a three dimensional landscape, Wren's scheme also called for an almost total rearrangement of streets and buildings within the City. Many property owners would have been obliged to build to a different ground plan, or on a different site, and no-one had the authority to insist upon that – especially not the King, given how successful London had been in limiting royal involvement with City affairs. Wren had submitted his plan to the king but Charles could not take it further without the unanimous agreement of parliament and all London's landowners and institutions. Such a consensus would be hard to achieve on even the most innocuous of issues; impossible when all parties simply wanted to get on with the urgent task of rebuilding their lives and livelihoods – London would fail or prosper accordingly.
But the king was in any case 'at one' with the city. On 13 September he issued a royal proclamation on desirable rebuilding procedures, undertook to rebuild the Custom House promptly, and to relinquish Crown property in the City wherever it would be of common benefit. By the end of September, there was a general agreement that the existing street lines and property boundaries must be accepted, and at the beginning of October six commissioners were appointed to supervise and effectively to control all technical aspects of the rebuilding work. Three were nominated by the king and three by the City. Wren was one of the king's nominees; Hooke was one of the City's.

21. The focus of Wren's plan for London was: *(see passage 1)*

A) a two-way split emphasising classical regularity
B) the site of the new St. Paul's cathedral
C) the linking of the parts by two main thoroughfares
D) a grand terrace along the river
E) total reworking of the old city plan

22. A.E.J. Morris's description suggests that: ***(see passage 1)***

A) Wren was attempting to gain a share of the building work
B) Wren was not interested in the commission
C) Wren did not understand the principles of the baroque
D) Wren was not an innovative architect
E) Wren comprehensively used Renaissance *planmotifs*

23. Wren's plan was impractical because: ***(see passage 1)***

A) it was unsuited to the topography of the site
B) the Fleet and the Walbrook disrupted the pattern
C) the hills would obscure the view
D) baroque architecture was too new
E) property owners preferred old ground plan

24. The king could not take the plan further because he: ***(see passage 1)***

A) lacked the necessary authority
B) didn't consider it suitable
C) needed approval that was a prerogative of Parliament
D) needed consensus from mutually antagonistic factions
E) preferred to appoint commissioners

25. The first result of Wren's submission was: ***(see passage 1)***

A) he was appointed as one of six commissioners
B) he designed St Paul's
C) He was appointed to rebuild London as it had been
D) he was appointed as Surveyor-General
E) he was forced to abandon his baroque vision

Passage 2

Rome: centre for the diffusion of Mediterranean culture

Rome was a great centre of cultural diffusion, by no means the only one, but certainly the most important. At the beginning of the sixteenth century it was still undistinguished, as Rabelais saw it on his first voyage in 1532, and as it is described in Marliani's *Topography* and various other guides. It was a small city in the centre of a pastoral economy; strewn and ringed round with ancient monuments often half-destroyed, atrociously disfigured, more often still buried to their foundations under earth and rubble. The inhabited part of the city was characterized by brick houses, sordid narrow streets and vast vacant lots.

During the sixteenth century, the city was transformed, new life was breathed into it as palaces and churches rose from the ground. Its population grew, maintaining its level even in the seventeenth century, an age generally unfavourable to Mediterranean cities. Rome became a gigantic building site. Any artist could find work there, an army of architect-masons to begin with: Baldassare Peruzzi of Siena (d.1536), Sammicheli of Verona (d. 1559), Sansovino of Florence (d.1570), Vignola (d.1573) from northern Italy (the cradle of almost all the great Italian architects), Ligorio of Naples (d.1583), Andrea Palladio of Vicenza (d.1580), Pellegrini of Bologna (d. 1596). Olivieri, an exception, was a native of Rome (d.1599). On the heels of these artisans, architects, and stone-cutters, pressed the army of painters necessary in an age of art when decorative painting reached its apogee. Domes and ceilings offered unlimited space to painters, while imposing on them sometimes strictly defined themes. The sacred painting of the Baroque was the logical consequence of its architecture.

It was at this time that the basilica of St Peter's was completed, and the Gesù built, between 1568 and 1575, by Giacomo Vignola, who died in 1573 without seeing his work completed. The first Jesuit church had now appeared; it was to serve many times as a model throughout Christendom. Every order would now wish to possess its own churches, in Rome and outside Rome, decorated in an individual style with the images of its particular patterns of worship. So there now sprang up, in the Eternal City and then all over the Christian world, the first churches with accolades and cupolas of sober geometry, of which the Val-de-Grâce is a later but still typical example in France.

The prodigious growth of Rome entailed vast expenditure. Stendhal correctly diagnosed the problem when he noted that 'only those countries which did not have to tremble for their authority were able to commission the great masterpieces of painting, sculpture and architecture of modern times'. This brings us back to the history of papal finances: it is now beyond dispute that the Popes drew enormous revenues from the papal states and also appealed successfully to public credit.

Their religious policies and indeed their policy in general in Christendom, were pursued less at their own expense than at that of the national churches. The churches of France and Spain were abandoned to the covetousness and financial needs of His Most Christian Majesty and His Catholic Majesty respectively. The papal states, during the fifty years which concern us, only rarely (in 1557 and during the three years of the Holy League) incurred heavy military expenses. So the papacy was able to allot a large budget to the fine arts. The invasion of the Mediterranean by American silver was to facilitate these luxurious investments. It was in the years after 1560-1570 that all the dreams of Leo X and Julius II were realized. Not only that but the religious orders, whose numbers were increased by the wave of Christian piety, added their efforts to those of the Popes. Rome being also the capital of these little states within the state, their shop window so to speak, Jesuits, Dominicans, Carmelites and Franciscans all contributed their share of financial effort and artistic emulation and copied, outside Rome, the achievements of the capital. If there was an artistic and religious expansion of the Baroque, it was the work of these orders, above all that of St Ignatius. It is for this reason that the adjective Jesuit seems to me in a way far more appropriate than that of Baroque to describe this expansion, notwithstanding the reservations which have been expressed concerning this claim.

26. Early sixteenth-century Rome was undistinguished mainly because: *(see passage 2)*

A) the monuments were either damaged or partially buried
B) the buildings were constructed in brick
C) It was described as insignificant in some tourist guides of the time
D) there was little trade
E) some of the area within the walls was uninhabited

27. The changes in Rome occurred mainly because: *(see passage 2)*

A) the popes and new religious orders financed the construction of new churches
B) there were many artisans available for building projects
C) the population grew enormously
D) many architects lived there
E) the new architectural elements defined the paintings that decorated them

28. The main contribution that the religious orders gave to the establishment of the Baroque style was that: *(see passage 2)*

A) they spread the style from Rome to all of the Papal States
B) they were committed to spreading Christian piety
C) they competition between the orders produced numerous architectural styles
D) they used new architectural elements in churches
E) their churches had a sober geometric style

29. The money needed for rebuilding Rome was available for all of the following reasons except one. Which one? *(see passage 2)*

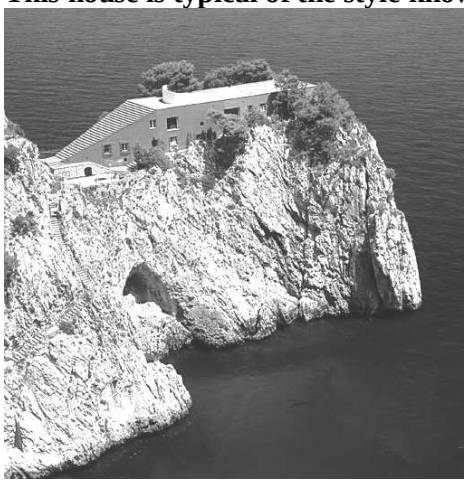
A) The kings of Spain and France appropriated the finances of their national churches
B) The Papal States were involved in few wars in the later sixteenth century
C) American silver was entering the European economy
D) All of the resources of the Papal States were used mainly in Rome by the Pope
E) Public credit was available

30. The main contribution to Baroque artistic and religious expansion came from: *(see passage 2)*

A) the cultural activities of Jesuits
B) the orders of Friars
C) the fact that many architects and painters came to Rome
D) the Popes of the later sixteenth century
E) the influence of Leo X and Julius II

Test di Storia

31. This house is typical of the style known as:



A) Rationalist
B) Futurist
C) Expressionist
D) Brutalist
E) Post Modernist

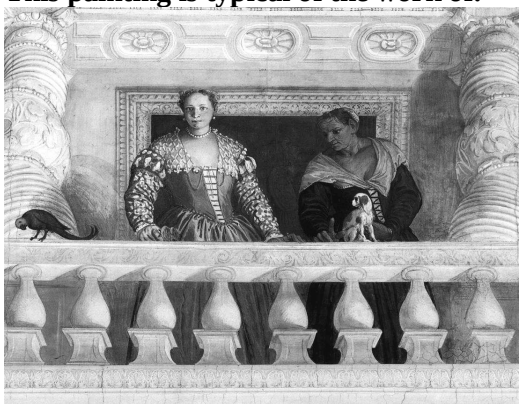
32. Starting from the ground, which list gives features of an Ionic Greek temple in the correct sequence?

A) Column shaft, volute, abacus, architrave, cornice
B) Column base, capital, architrave, pediment, frieze
C) Capital, pediment, frieze, architrave, cornice
D) Column base, abacus, volute, pediment, entablature
E) Column shaft, volute, frieze, architrave, abacus

33. All the following quotations are taken from the Communist Manifesto except:

A) Our epoch, the epoch of the feudal landowner, possesses this distinct feature: it has simplified class antagonisms
B) The history of all hitherto existing society is the history of class struggles
C) The proletarians have nothing to lose but their chains. They have a world to win
D) Working men of all countries, unite!
E) Society as a whole is more and more splitting up into two great hostile camps, into two great classes directly facing each other — Bourgeoisie and Proletariat

34. This painting is typical of the work of:



A) Paolo Veronese
B) Federico Barocci
C) Raphael
D) Tintoretto
E) Annibale Carracci

35. Which of the following movements influenced the design of this chair:



A) Bauhaus
B) Arts and Crafts
C) Art Deco
D) Neoplasticism
E) Brutalist

36. Which is the correct chronological order for these buildings, with the earliest one first?



a



b



c



d



e

A) e, d, a, b, c
B) a, c, d, e, b
C) d, e, c, b, a
D) b, a, d, e, c
E) c, a, b, e, d

37. In the reign of which Byzantine Emperor was the Hagia Sophia built in Constantinople?

A) Justinian
B) Constantine
C) Manuel Comnenus
D) Heraclius
E) Arcadius

38. The 'Donation of Constantine' was:

A) A document by which medieval Popes claimed secular rights over lands in Italy
B) The decree ordering the cessation of persecution of Christians in the Roman Empire
C) The decree allowing Licinius to make laws in the eastern province of the Roman Empire
D) The creation of the new capital city at Constantinople
E) The establishment of the Nicene creed at the Council of Nicaea

39. Which of the following is NOT a characteristic of the rule of 18th century enlightened despots?

A) Complete religious toleration
B) Refusal to grant a constitution
C) Patronage of the arts and sciences
D) Government based on rationalism
E) Support for education

40. Which one of these statements is true?

A) The Berlin Wall was built in 1961 to stop East Germans escaping to the West
B) The Berlin Wall was built in 1950 after the Berlin Blockade of 1948-9
C) The Berlin Wall was built in 1956 after the Hungarian Rebellion
D) The Berlin Wall was one of Stalin's major policies
E) The Berlin Wall was built in 1962 after the Cuban Crisis

41. What is the name of the architect who designed this church?



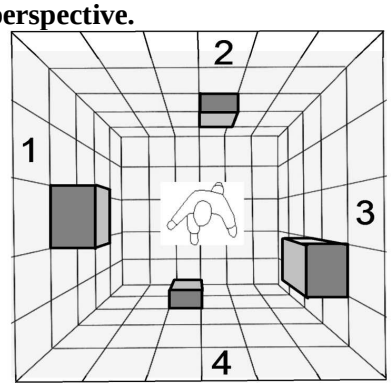
A) Andrea Palladio
B) Baldassarre Longhena
C) Vignola
D) Gian Lorenzo Bernini
E) Antonio da Sangallo

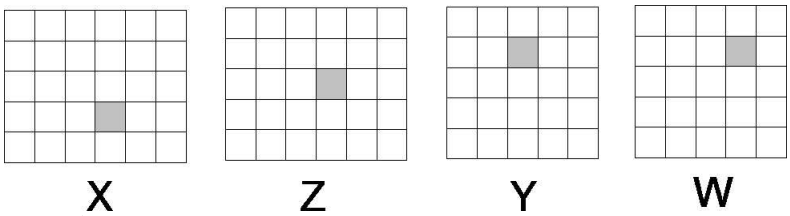
42. Which of these facts about Pericles of Athens is NOT true?

A) He died in battle
B) He was a great orator
C) He had a reputation for honesty
D) He master-minded the construction of the Parthenon
E) He was a patron of learning and the arts

Test di Disegno e Rappresentazione

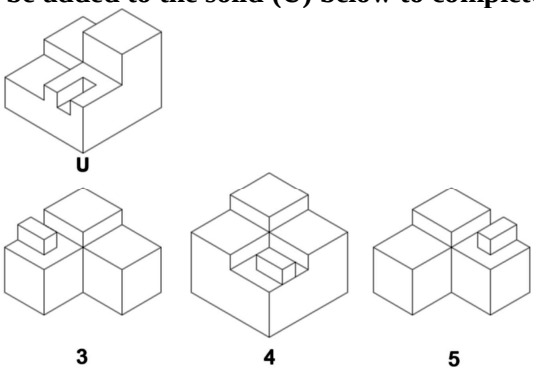
43. Match each view (X, Z, Y and W) to the respective wall (1, 2, 3 and 4) of the room drawn in perspective.





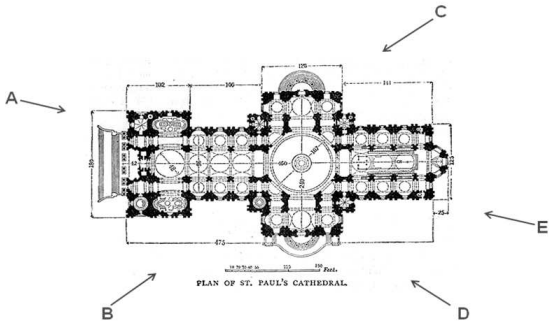
A) 1 – Y; 2 – Z; 3 – W; 4 – X
B) 1 – W; 2 – X; 3 – Y; 4 – Z
C) 1 – X; 2 – Y; 3 – W; 4 – Z
D) 1 – Y; 2 – W; 3 – Z; 4 – X
E) 1 – X; 2 – Z; 3 – W; 4 – Y

44. Which of the solids (1 to 5) can be added to the solid (U) below to complete a regular cube?



A) 2
B) 3
C) 5
D) 1
E) 4

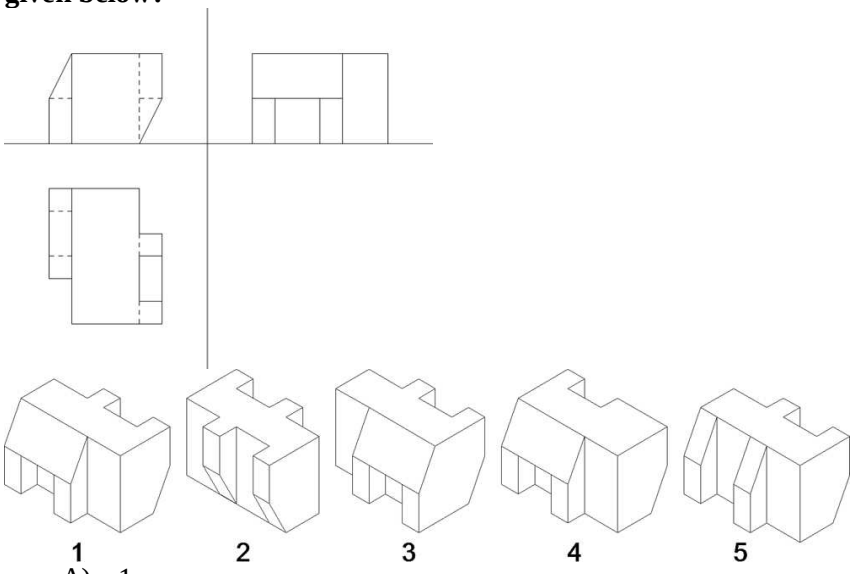
45. Where was the photographer standing when he took this picture of the Cathedral?





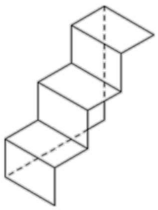
A) D
B) A
C) B
D) C
E) E

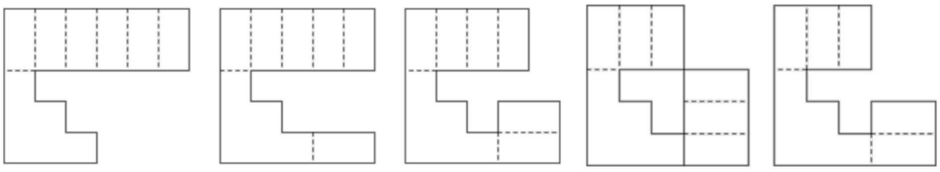
46. Which of the isometrically drawn objects (1 to 5) is consistent with the three orthogonal projections given below?



A) 1
B) 2
C) 3
D) 4
E) 5

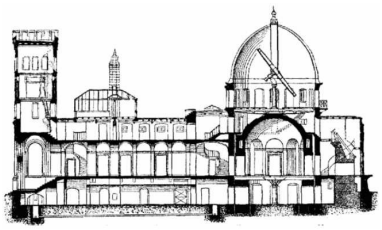
47. Which of the diagrams (1 to 5) can NOT be the development of the object represented in the figure below?



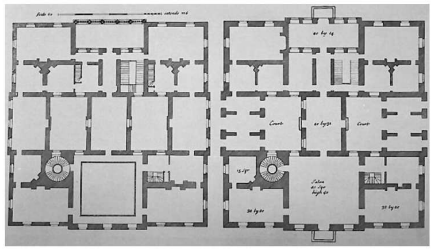


A) 5
B) 4
C) 3
D) 2
E) 1

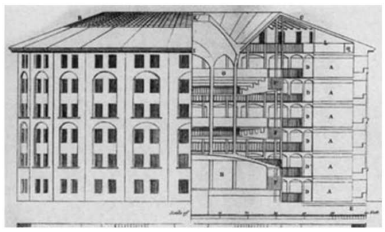
48. What kind of representation is shown in each of the figures 1, 2, 3 and 4?



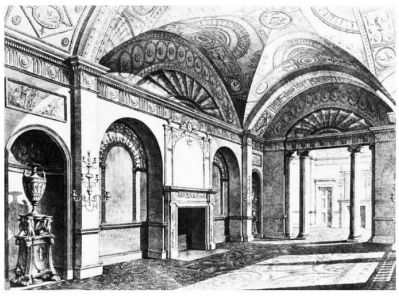
1



2



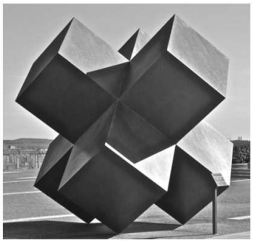
3

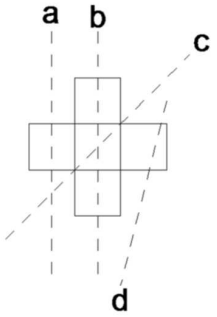


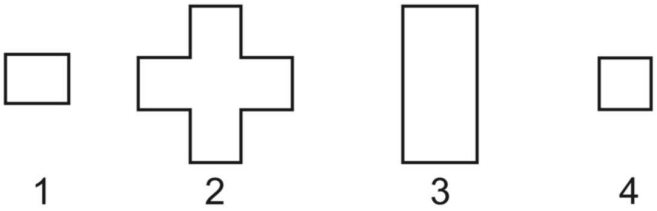
4

A) 1 – sectional view; 2 – plan view; 3 – elevation and sectional view; 4 – perspective view
B) 1 – plan view; 2 – sectional view; 3 – perspective view; 4 – elevation and sectional view
C) 1 – sectional view; 2 – elevation and sectional view; 3 – plan view; 4 – perspective view
D) 1 – perspective view; 2 – plan view; 3 – elevation and sectional view; 4 – sectional view
E) 1 – perspective view; 2 – sectional view; 3 – plan view; 4 – elevation and sectional view

49. The geometric sculpture shown here is made up of 7 solid regular cubes. Which geometric figure (1 to 4) corresponds to the four sections defined by the planes a, b, c and d?

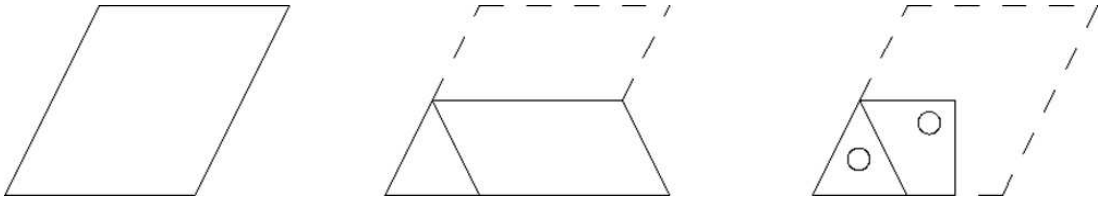




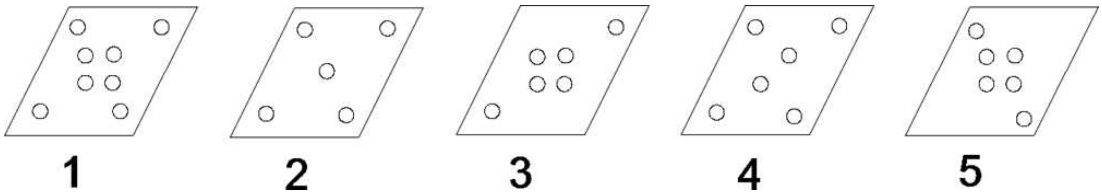


A) a – 4; b – 2; c – 3; d – 1
B) a – 2; b – 3; c – 1; d – 4
C) a – 3; b – 1; c – 4; d – 2
D) a – 1; b – 4; c – 2; d – 3
E) a – 4; b – 1; c – 2; d – 3

50. A sheet of paper is folded and perforated as shown below.

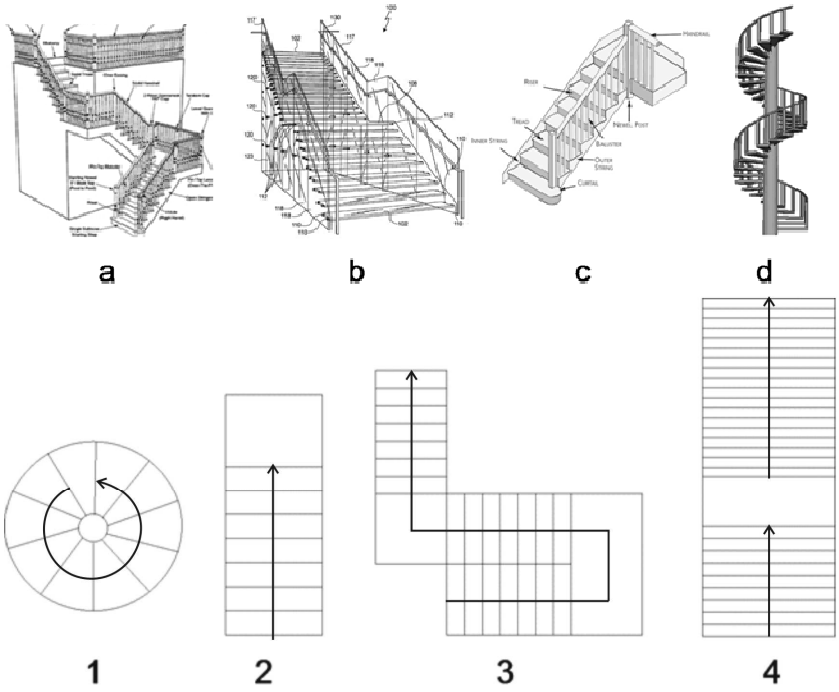


Which pattern of perforations will result when the paper is unfolded?



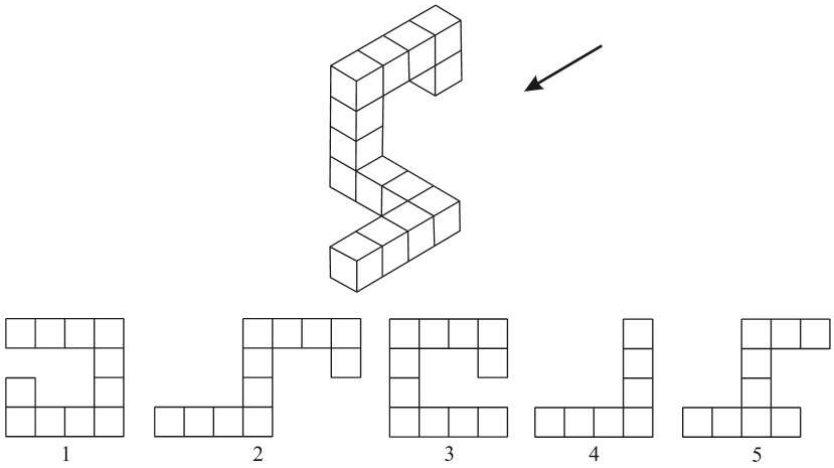
A) 3
B) 5
C) 1
D) 2
E) 4

51. Match the three-dimensional views (a to d) with the plan projections (1 to 4) below.



A) 1 – d, 2 – c, 3 – a, 4 – b
B) 1 – a, 2 – b, 3 – c, 4 – d
C) 1 – d, 2 – a, 3 – c, 4 – b
D) 1 – b, 2 – d, 3 – c, 4 – a
E) 1 – c, 2 – d, 3 – b, 4 – a

52. The object shown below is drawn on an isometric grid. Which of the diagrams 1 – 5 show the view drawn from the direction of the arrow?



A) 4
B) 1
C) 2
D) 3
E) 5

53. The mean mass of 4 rowers is 85 kg. One of the rowers, with a mass of 86 kg, was injured and replaced. The new mean mass is 87 kg. What is the mass of the new rower in kg?

A) 94
B) 86
C) 88
D) 104
E) 90

54. Simplify: $\dfrac{x}{2x+3}-\dfrac{9}{4x^2-9}$

A) $\dfrac{x-3}{2x-3}$

B) $\dfrac{4x^3+2x+3}{4x^2(2x+3)}$

C) $\dfrac{(x+3)(2x-3)}{(2x+3)(2x+3)}$

D) $\dfrac{x+3}{2x+3}$

E) $\dfrac{x+3}{2x-3}$

55. Which of the following is the mid-point of the straight line segment joining $(p,\ 2p)$ to $(1-2p,\ 6p-3)$?

A) $\left(\dfrac{1-p}{2},\ 4p-\dfrac{3}{2}\right)$

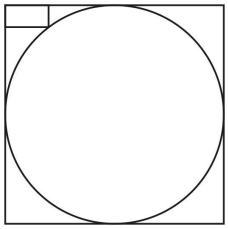
B) $\left(\dfrac{p-1}{2},\ 4p-\dfrac{3}{2}\right)$

C) $\left(\dfrac{1-p}{2},\ 4p+\dfrac{3}{2}\right)$

D) $\left(\dfrac{p-1}{2},\ 4p+\dfrac{3}{2}\right)$

E) $\left(\dfrac{1-3p}{2},\ 2p-\dfrac{3}{2}\right)$

56. A circle is placed in a square that has the same side length as the circle's diameter. A rectangle of dimensions 2 cm by 1 cm fits exactly between a corner of the square and the circle, such that a corner of the rectangle coincides with the corner of the square and the opposite corner touches the circle.



What is the radius of the circle?

A) 5 cm
B) $\sqrt{2}$ cm
C) 2 cm
D) $\sqrt{5}$ cm
E) $\frac{\sqrt{2}}{\sqrt{2}-1}$ cm

57. A thin uniform plank, with ends labelled A and B, weighs 150 N and has a length of 6 m. It rests on a support at its half-way point. A particle with a mass of 20 kg is placed 1.5 metres from A. At B a particle with a mass of 4 kg is placed on the plank.
How far from B should a mass of 10 kg be placed so that the plank is in rotational equilibrium?

A) 1.2 m
B) 4.2 m
C) 4.8 m
D) 1.8 m
E) 1.5 m

58. The interior of a water tank is cuboid shaped. It has a square base of side length 80 cm and a height of 1.5 m. When the tank is half full of water what is the mass of water in the tank?

A) 480 kg
B) 9600 kg
C) 960 kg
D) 4800 kg
E) 6000 kg

59. A sphere of mass 2 kg moves in a straight line at a speed of 5 ms^{-1} on a smooth flat surface. It hits a vertical wall and rebounds in the direction from which it came with a speed of 3 ms^{-1}.
What is the change in its linear momentum due to the collision with the wall?

A) 16 kg ms^{-1}
B) 8 kg ms^{-1}
C) 4 kg ms^{-1}
D) 32 kg ms^{-1}
E) 2 kg ms^{-1}

60. A block of polystyrene has a volume of 600 ml. What volume of the block will be above the liquid when it floats in carbon tetrachloride?
[density of polystyrene = 1060 kg/m^3; density of carbon tetrachloride = 1590 kg/m^3]

A) 200 ml
B) 0 ml
C) 0.20 ml
D) 0.40 ml
E) 400 ml

********** FINE DELLE DOMANDE **********

In tutti i quesiti proposti la soluzione è la risposta alla lettera A)

TEST ARCHITETTURA 2013

RIFALLA NELL'APP

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