GATE 2015

Computer Science & IT

**General Aptitude
(Question With Solution
Set-1, 2 & 3)**

SET-1

1. Which of the following combinations is incorrect?

A. Acquiescence – Submission

B. Wheedle – Roundabout

C. Flippancy – Lightness

D. Profligate – Extravagant

Ans. B

Sol. Reason:

Wheedle: use endearments or flattery to persuade someone to do something or give one something.

Roundabout -a road junction at which traffic moves in one direction round a central island to reach one of the roads converging on it.

Both are mismatch.

Meaning of other options:

Flippancy --- lack of respect or seriousness.

Acquiescence --- the reluctant acceptance of something without protest.

Wheedle --- use endearments or flattery to persuade someone to do something or

Profligate --- recklessly extravagant

2. Didn't you buy _____ when you went shopping?

A. any paper   B. much paper

C. no paper   D. a few paper

Ans. A

3. Which of the following options is the closest in meaning to the sentence below?

She enjoyed herself immensely at the party.

A. She had a terrible time at the party.

B. She had a horrible time at the party.

C. She had a terrific time at the party

D. She had a terrifying time at the party

Ans. C

Sol. Except C, all other options indicate that she didn't enjoy.

Horrible and terrible means **fearful** .

Terrific means **wonderful.**

4. The number of students in a class who have answered correctly, wrongly, or not attempted each question in an exam, are listed in the table below. The marks for each question are also listed. There is no negative or partial marking.

Q No	Marks	Answered Correctly	Answered Wrongly	Not Attempted
1	2	21	17	6
2	3	15	27	2
3	1	11	29	4
4	2	23	18	3
5	5	31	12	1

What is the average of the marks obtained by the class in the examination?

A. 2.290   B. 2.970

C. 6.795   D. 8.795

Ans. C

Sol. There are total 44 students. This count can be obtained by adding last 3 entries of any row of given total.

Total marks = 2*21 + 3*15 + 1*11 + 2*23 + 5*31

= 299

Average marks = 299/44 = 6.795

5. The pie chart below has the breakup of the number of students from different departments in an engineering college for the year 2012. The proportion of male to female

students in each department is 5:4. There are 40 males in Electrical Engineering. What is the difference between numbers of female students in the Civil department and the female students in the Mechanical department?
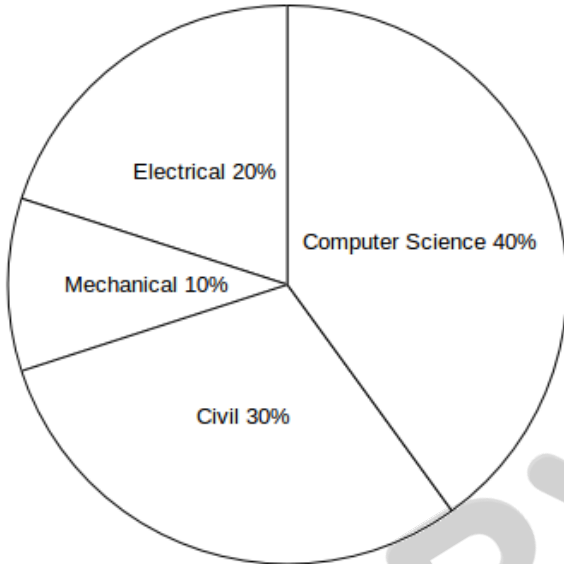
A. 32   B. 35
C. 38   D. 40

Ans. A

Sol. The Electrical male students = 40

∴ Electrical female students = 40 × (4/5)= 32

Total no. of students in Electrical department = (40 + 32) = 72 (which is 20% of the total mass)

∴ Total no. of students in the college = 72 × (100/20) = 360

Total no. of students in Civil department = 360 × (30/100) = 108

Civil female students = 108 × (4/9) = 48

Total no. of students in Mechanical department = 360 × (10/100) = 36

Mechanical female students = 36 × (4/9) = 16

∴ Difference = (48 − 16) = **32** (Ans)

6. Given set A = {2, 3, 4, 5} and Set B = {11, 12, 13, 14, 15}, two numbers are randomly selected, one from each set. What is probability that the sum of the two numbers equals 16?

A. 0.20   B. 0.25
C. 0.30   D. 0.33

Ans. A

Sol. Total number of pairs = 5 * 4 = 20

Now, our favorable pairs = (5,11), (4,12), (3,13), (2,14)

So probability of choosing one of these pairs among total 20 pairs is = 4/20 = 0.2

7. Select the alternative meaning of the underlined part of the sentence.

The chain snatchers **took to their heels** when the police party arrived.

A. took shelter in a thick jungle

B. open indiscriminate fire

C. took to flight

D. unconditionally surrendered

Ans. C

Sol. Explanation: Both **took to flight** and **took to their heels** mean run away.

8. The probabilities that a student passes in Mathematics, Physics and Chemistry are m, p, and c respectively. Of these subjects, the student has 75% chance of passing in at least one, a 50% chance of passing in at least two and a 40% chance of passing in exactly two. Following relations are drawn in m, p, c:

(I) p + m + c = 27/20

(II) p + m + c = 13/20

(III) (p) × (m) × (c) = 1/10

A. Only relation I is true

B. Only relation II is true

C. Relations II and III are true.

D. Relations I and III are true.

Ans. D

Sol. Probability of non pass $=1-=1-$ Probability of at least one pass

$=1-0.75=0.25=1-0.75=0.25$

$(1-m)(1-p)(1-c)=0.25(1-m)(1-p)(1-c)=0.25$

$(1+mp-m-p)(1-c)=0.25(1+mp-m-p)(1-c)=0.25$

$1+mp-m-p-c-mpc+mc+pc=0.251+mp-m-p-c-mpc+mc+pc=0.25$

$m+p+c-mp-pc-mc+mpc=0.75\rightarrow(1)m+p+c-mp-pc-mc+mpc=0.75\rightarrow(1)$

Probability of exactly 22 pass $=0.4=0.4$

$mp(1-c)+pc(1-m)+mc(1-p)=0.4$

$mp+pc+mc-3mpc=0.4$

$mp+pc+mc-2mpc=0.5\rightarrow(2)$

(Adding the probability of all pass to probability of exactly 2 pass gives probability of at least 2 pass)

So, $mpc=0.1\rightarrow(3)$

From (2) and (3),

$mp+pc+mc-mpc=0.6\rightarrow(4)$

From (1) and (4)

$m+p+c=0.75+0.6$

$m+p+c=1.35=135/100=27/20$

9. The given statement is followed by some courses of action. Assuming the statement to be true, decide the correct option.

   Statement:

   There has been a significant drop in the water level in the lakes supplying water to the city.

   Course of action:

   (I) The water supply authority should impose a partial cut in supply to tackle the situation.

   (II) The government should appeal to all the residents through mass media for minimal use of water.

   (III) The government should ban the water supply in lower areas.

   A. Statements I and II follow.

   B. Statements I and III follow

   C. Statements II and III follow.

   D. All statements follow

Ans. A

Sol.

10. Based on the given statements, select the most appropriate option to solve the given question.

    If two floors in a certain building are 9 feet apart, how many steps are there in a set of stairs that extends from the first floor to the second floor of the building?

    Statements:

    (I) Each step is 3/4 foot high.

    (II) Each step is 1 foot wide.

    A. Statement I alone is sufficient, but statement II alone is not sufficient.

    B. Statement II alone is sufficient, but statement I alone is not sufficient.

    C. Both statements together are sufficient, but neither statement alone is sufficient.

    D. Statement I and II together are not sufficient.

Ans. A

Sol. When we climb from one floor to other, it is the height that matters and not the width of the staircase. Therefore, From statement 1 only, we can figure out that 9 / (3/4) or 12 steps are required.

Set-2

1. Based on the given statements, select the most appropriate option to solve the given question.

   What will be the total weight of 10 poles each of same weight?

   Statements:

   (I) One fourth of the weight of a pole is 5 kg

   (II) The total weight of these poles is 160 kg more than the total weight of two poles.

   A. Statement I alone is not sufficient

   B. Statement II alone is not sufficient

   C. Either I or II alone is sufficient

   D. Both statements I and II together are not sufficient

Ans. C

Sol. (I) is sufficient. We can determine total weight of 10 poles as 10 * 4 * 5 = 200 Kg

   (II) is also sufficient, we can determine the weight.

   Let x be the weight of 1 pole.

   10*x - 2*x = 160 Kg

   x = 20 Kg
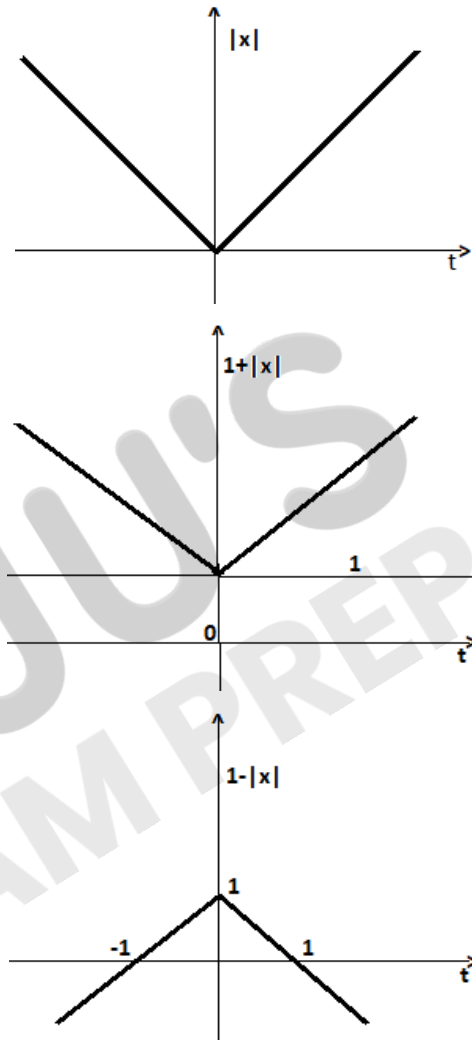
   10x = 200 Kg

2. Consider a function $f(x) = 1 - |x|$ on $-1 \leq x \leq 1$. The value of x at which the function attains a maximum, and the maximum value of function are:

   A. 0, -1   B. -1,0

   C. 0, 1   D. -1, 2

Ans. C

Sol.

From the Curve of 1-|x| we have seen that its maximum value occurs at x = 0, & the Maximum value = 1.

Alternate Method -

Put the value of x of all the options in f(x) and find the maximum value of f(x).

3. A generic term that includes various items of clothing such as a skirt, a pair of trousers and a shirt as

   A. fabric   B. textile

   C. fibre   D. apparel

Ans. D

Sol. The words given in the options are defined below.

(A) Fabric – artifact made by weaving or felting or knitting or crocheting natural or synthetic fibres.

(B) Textile- textile and fabric are synonym

(C) Fibre – a leather like material made by compressing layers of paper or cloth.

(D) apparel – clothing in general

Thus, apparel is the generic term that includes various items of clothing such as a skirt, a pair of trousers and a shirt.

4. Choose the statement where underlined word is used correctly.

A. The industrialist had a personnel jet.

B. I write my experience in my personnel diary.

C. All personnel are being given the day off.

D. Being religious is a personnel aspect.

Ans. C

Sol. **personnel means** the people who work for a large organization or one of the armed forces "All personnel are being given the day off" is correct.

- The industrialist had a **personnel** jet. (Personal should come in place of personnel)

- I write my experience in my **personnel** diary. (Personal should come in place of personnel)

- Being religious is a **personnel** aspect. (Personal should come in place of personnel)

5. We (1) _____ our friend's birthday and we (2) _____ how to make it up to him.

A. (1) completely forgot
   (2) don't just know

B. (1) forget completely
   (2) don't just know

C. (1) completely forgot
   (2) just don't know

D. (1) forgot completely
   (2) just don't know

Ans. C

Sol. In the first blank, an adverb should be used before the verb, i.e. **completely forgot**.

Again, in second blank, adverb should be used before the verb.We must note that adverb is not being used in between the auxiliary verb, i.e. **just don't know**.

Thus, the complete Sentence is

We completely forgot our friend's birthday and we just don't know how to make it up to him.

6. In a triangle PQR, PS is the angle bisector of ∠QPR and ∠QPS = 60 º. What is the length of PS?
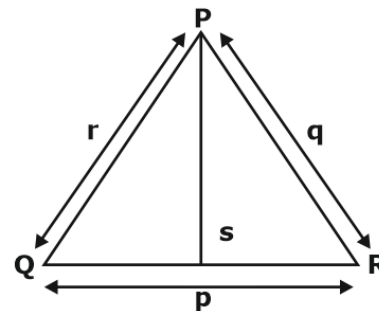
A. $\dfrac{(q+r)}{qr}$

B. $\dfrac{qr}{(q+r)}$

C. $\sqrt{\left(q^2+r^2\right)}$

D. $\dfrac{(q+r)^2}{qr}$

Ans. B

Sol. Area of a Δ = 1/2 × ac sinB = 1/2 × bc sinA = 1/2 × ab sinC (as the area of a triangle can be expressed using the lengths of two sides and the sine of the included angle).

∴ Area of ΔPQR = Area of ΔPQS + Area of ΔPSR

⇒ 1/2 × qr sin∠QPR = 1/2 × rs sin∠QPS + 1/2 × sq sin∠SPR (where s is the length of PS)

⇒ 1/2 × qr sin120° = 1/2 × rs sin60° + 1/2 × sq sin60° (as PS is bisector of ∠QPR and ∠QPS = 60°)

⇒ 1/2 × qr × √3/2 = 1/2 × rs × √3/2 + 1/2 × sq × √3/2

⇒ qr = rs + sq

⇒ s = **qr/(q+r)**

Hence, the correct answer is **Option (B)**.

7. Out of the following four sentences, select the most suitable sentence with respect to grammar and usage:

A. Since the report lacked needed information, it was of no use to them.

B. The report was useless to them because there were no needed information in it.

C. Since the report did not contain the needed information, it was not real useful to them

D. Since the report lacked needed information, it would not had been useful to them.

Ans. A

Sol. Since the report lacked needed information, it was of no use to them is most suitable options.

8. If the list of letters, P, R, S, T, U is an arithmetic sequence, which of the following are also in arithmetic sequence?

I. 2P, 2R, 2S, 2T, 2U

II. P -3, R -3, S -3, T -3, U -3

III. P^2, R^2, S^2, T^2, U^2

A. I only

B. I and II

C. II and III

D. I and III

Ans. B

Sol. If P, R, S, T, U are in arithmetic sequence with a common difference 'd'

Then 2P, 2R, 2S, 2T, 2U will be an arithmetic sequence with common difference '2d'

P-3, R-3, S-3, T-3, U-3 will be an arithmetic sequence with common difference 'd'.

P^2 ,R^2 ,S^2 ,T^2 ,U^2 Will not be an arithmetic sequence.

9. If p, q, r, s are distinct integers such that:

f (p, q, r, s) = max (p, q, r, s)

g (p, q, r, s) = min (p, q, r, s)

h (p, q, r, s) = remainder of (p × q)/(r × s) if (p × q) > (r × s) or remainder of (r × s)/(p × q) if (r × s) > (p × q)

Also a function fgh (p, q, r, s) = f(p, q, r, s) × g(p, q, r, s) × h(p, q, r, s)

Also the same operations are valid with two variable function of the form f(p, q).

What is the value of fg(h(2, 5, 7, 3), 4, 6, 8)?

A. 8

B. 9

C. 11

D. 13

Ans. A

Sol. f g (h(2, 5, 7, 3), 4, 6, 8)

=fg(1, 4, 6, 8)

=f(1, 4, 6, 8) x g(1, 4, 6, 8) = 8 x 1 = 8

10. Four branches of a company are located at M, N, O, and P. M is north of N at a distance of 4 km; P is south of O at a distance of 2 km; N is southeast of O by 1 km. What is the distance between M and P in km?
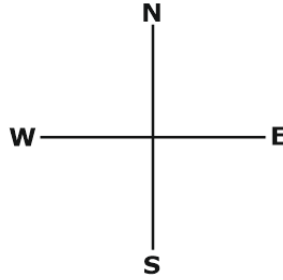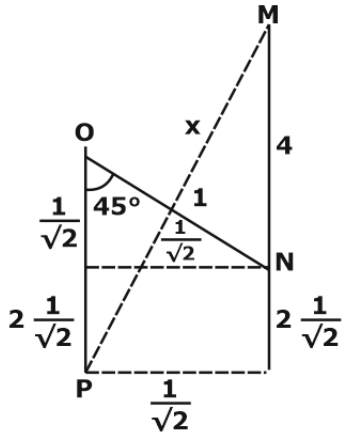
A. 5.34   B. 6.74
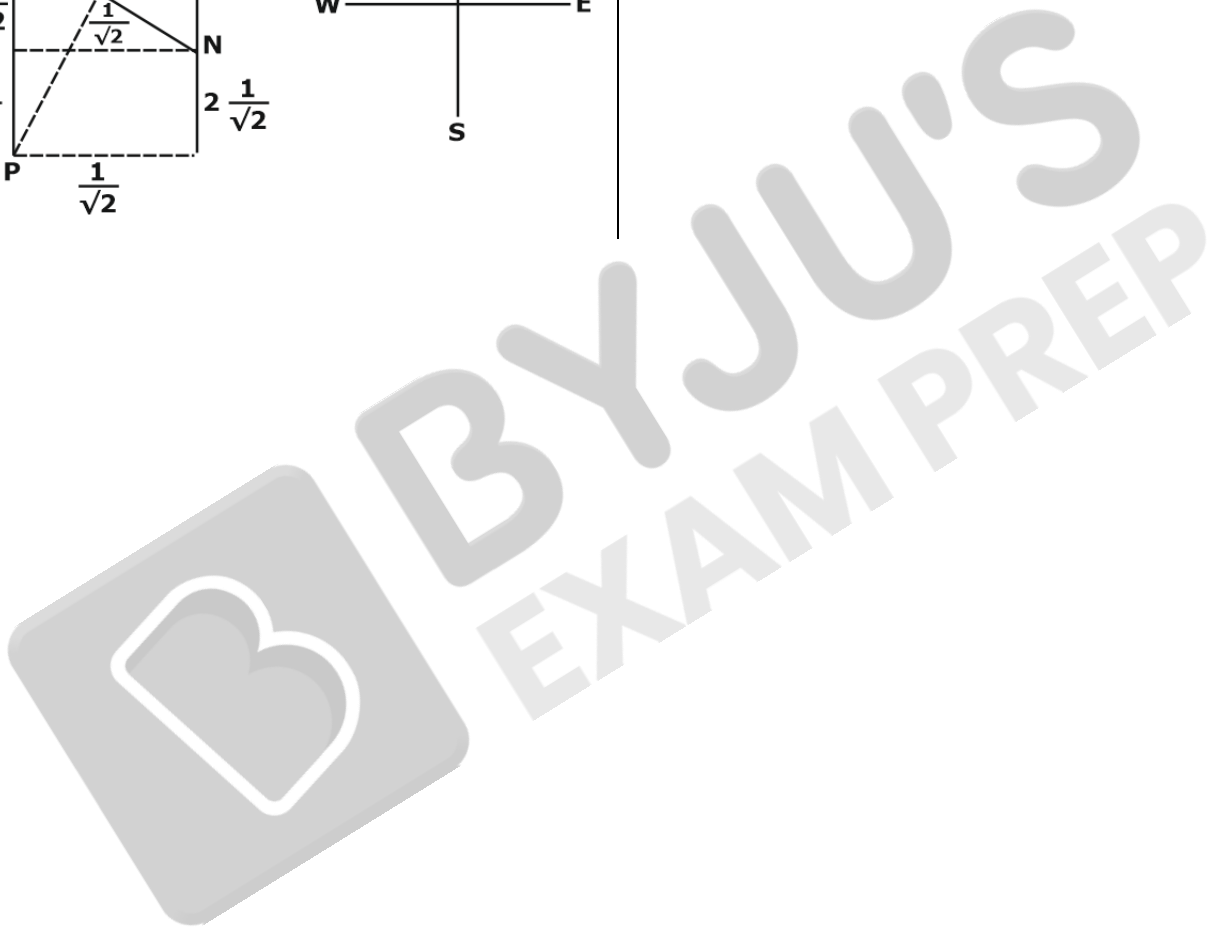
C. 28.5   D. 45.49

Ans. A

Sol.

$$a = \frac{1}{\sqrt{2}}$$

$$x = \sqrt{[4 + (2 - a)]^2 + a^2}$$

Solving we get x=5.34.

Set-3

1. Select the pair that best expresses a relationship similar to that expressed in the pair:

Children: Paediatrician

A. Adult: Orthopaedist

B. Females: Gynaecologist

C. Kidney: Nephrologist

D. Skin: Dermatologist

Ans. B

Sol. Orthopaedist: An orthopaedic surgeon, a doctor who corrects congenital or functional abnormalities of the bones with surgery, casting, and bracing.

Gynaecologist: a physician or surgeon qualified to practice in functions and diseases specific to women and girls, especially those affecting the reproductive system.

Nephrologist: is a medical doctor who specializes in kidney care and treating diseases of the kidneys.

Dermatologist: is a medical practitioner qualified to diagnose and treat skin disorders. Kidney and skin are parts of a body. Females is the only option which represents **group of people** like children which is the correct option.
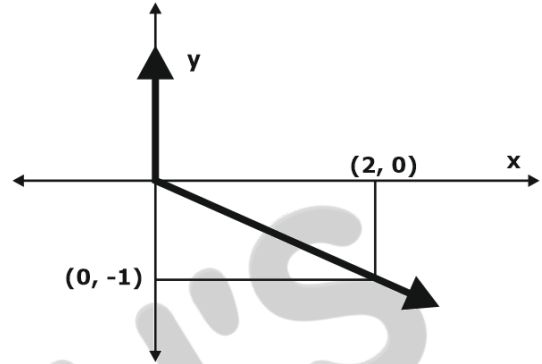
2. If ROAD is written as URDG, then SWAN should be written as:

A. VXDQ   B. VZDQ

C. VZDP   D. UXDQ

Ans. B

Sol. R+3=U, O+3=R, A+3=D, D+3=G;

S+3=V, W+3=Z, A+3=D, N+3=Q

3. Choose the most appropriate equation for the function drawn as thick line, in the plot below.

A. $x = y - |y|$ B. $x = - (y-|y|)$

C. $x = y + |y|$ D. $x = - (y + |y|)$

Ans. B

Sol. The problem can be easily solved by trying point (2, -1)

on thick line, i.e., x = 2, y = -1.

None of the options except (B) satisfy above values.

4. Most experts feel that in spite of possessing all the technical skills required to be a batsman of the highest order, he is unlikely to be so due to lack of requisite temperament. He was guilty of throwing away his wicket several times after working hard to lay a strong foundation. His critics pointed out that until he addressed this problem success at the highest level will continue to elude him.

Which of the statement (s) below is/are logically valid and can be inferred from the above passage?

(i) He was already a successful batsman at the highest level

(ii) He has to improve his temperament in order to become a great batsman

(iii) He failed to make many of his good starts count

(iv) Improving his technical skills will guarantee success

A. (iii) and (iv)   B. (ii) and (iii)

C. (i), (ii) and (iii)   D. (ii) only

Ans. B

Sol. (i) is incorrect "He was guilty of throwing away his wicket several times after working hard to lay a strong foundation. "

(ii) is correct, "His critics pointed out that until he addressed this problem, success at the highest level will continue to elude him."

(iii) is correct, "His critics pointed out that until he addressed this problem, success at the highest level will continue to elude him."

(iv) is incorrect "Temperament is also required".

5. Alexander turned his attention towards India, since he had conquered Persia.

Which one of the statements below is logically valid and can inferred from the above sentence?

A. Alexander would not have turned his attention towards India had he not conquered Persia.

B. Alexander was not ready to rest on his laurels, and wanted to march to India

C. Alexander was completely in control of his army and could command it to move towards India

D. Since Alexander's kingdom extended to Indian borders after the conquest of Persia, he was keen to move further

Ans. A

Sol. Explanation: Conquering Persia was the reason for Alexander turning his attention towards India.

6. The exports and imports (in crores of Rs.) of a country from the year 2000 to 2007 are given in the following bar chart. In which year is the combined percentage increase in imports and exports with respect to previous year is the highest?
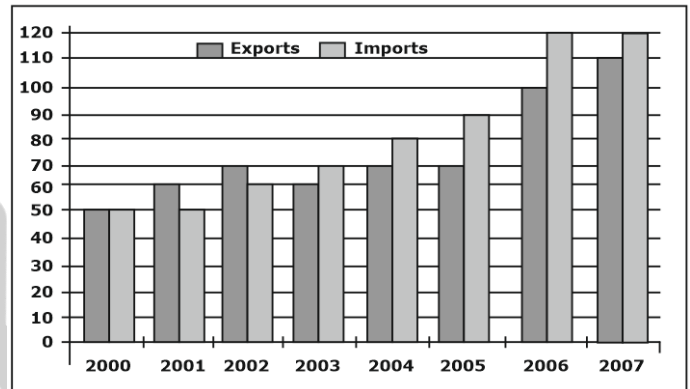
A. 2007   B. 2003

C. 2004   D. 2006

Ans. D

Sol. In 2006 export increased from 70 to 100 and import increased from 90 to 120.

% increase in import = 30/70 = 42.8 %

% increase in export = 30/90 = 33.33 %

Combined % increase in 2006 is more than any other year

7. Extreme focus on syllabus and studying for tests has become such a dominant concern of Indian students that they close their minds to anything _____ to the requirements of the exam

A. related   B. extraneous

C. outside   D. useful

Ans. B

Sol. extraneous -irrelevant or unrelated to the subject being dealt with.

8. A function f(x) is linear and has a value of 29 at x = -2 and 39 at x = 3. Find its value at x = 5

A. 59   B. 45

C. 43   D. 35

Ans. C

Sol. For a linear function :

F(x) = ax + b

Now first put F(x) = 29 and x = -2, you will get an equation 29 = -2a + b

Now put F(x) = 39 and x = 3 you will get an equation 39 = 3a + b

Solving them both you will get

a = 2 and b = 33

Hence the linear function is :**F(x)=2x+33**

Hence F(5) = 10 + 33 = **43 (ANSWER)**

9. The Tamil version of _____ John Abraham-starrer Madras café _____ cleared by the Censor Board with no cuts last week but the film's distributors _____ no takers among the exhibitors for a release in Tamil Nadu _____ this Friday.

A. Mr., was, found, on

B. a, was, found, at

C. the, was, found, on

D. a, being, find at

Ans. C

Sol. John-Abraham starrer Madras Café talks about the movie not the person, so Mr. is ruled out. Article "the" is used to define a particular object here(The Movie). 'Find no takers' is not the correct phrase. At this Friday is incorrect. So, option C is correct.

10. The head of a newly formed government desires to appoint five of the six selected members P, Q, R, S, T and U to portfolios of Home, Power, Defense, Telecom, and Finance. U does not want any portfolio if S gets one of the five. R wants either Home or Finance or no portfolio. Q says that if S gets either Power or Telecom, then she must get the other one. T insists on a portfolio if P gets one.

Which is the valid distribution of portfolios?

A. P-Home, Q-Power, R- Defence, S-Telecom, T-Finance

B. R-Home, S-Power, P- Defence, Q-Telecom, T-Finance

C. P-Home, Q-Power, T- Defence, S-Telecom, U-Finance

D. Q-Home, U-Power, T- Defence, R-Telecom, P-Finance

Ans. B

Sol. "Udoes not want any portfolio ifSgets one of the five"

So,Sand U cannot come together. OptionCeliminated.

"Rwants either Home or Finance or no portfolio"

So, optionsAandDeliminated.

So, answer is B.

Just to confirm:

Qsays that ifSgets Power or Telecom, then she must get the other one

InBB,SSgets Power andQQgets Telecom

"T insists on a portfolio ifPPgets one"

InB,Tis getting a portfolio

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