



**MAT 2012**

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# Language Comprehension

## Instructions

A sentence has been divided into four parts. Choose the part that has an error.

### Question 1

- A In the past, behind the immediate popularity
- B of the phonograph is the entire electric
- C implosion that gave such new stress and
- D importance to actual speech rhythms in music, poetry, and dance alike

Answer: B

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### Question 2

- A Science really begins when general principles
- B have to be put to the test of fact
- C and when practical problems and theoretical relations
- D of relevant factors is used to manipulate reality in human action

Answer: D

### Question 3

- A If all cells are conceived primarily as a receptacles
- B of the same genetic formula - not only all
- C the individuals, but all the cells of
- D the same individuals - what are they but the cancerous extension of this base formula?

Answer: A

## Instructions

Rearrange the following letters and make a meaningful word which is opposite to the answers.

### Question 4

TSTHNAIE

- A dental
- B decorte
- C careful
- D willing

Answer: D

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### Question 5

NIETEMARG

- A conscience
- B terminate
- C confrontation
- D considerate

Answer: B

### Question 6

TENALSGERI

- A comfortable
- B combustible
- C confess
- D specialist

Answer: D

### Instructions

Study the passage below and answer the questions.

#### PASSAGE - I

For decades, the Government has grappled with India's health care shortcomings by introducing various programmes. Despite some measure of success, the problem of universal health care access continues to fester like a recalcitrant sore. While there are several reasons for the lack of complete success in improving health care access, the overall problem may lie in the pursuit of improper priorities. To address access issued headon, radically improving primary health care in India should be top priority. A steep shortage in primary health care centres (PHCs) across India is the prime reason why villagers are forced to trek almost 20 km to reach the nearest PHC. This may still be of little use, because most PHCs are perpetually plagued by a supply and staff shortage, making matters worse for sick patients who expend time, energy and resources to reach the PHC. For people from towns and semi-urban areas seeking modern medical care the situation is no different since they need to travel to the nearest city. Despite 7,50,000 doctors registered with the Medical Council of India, the ground reality is that about 2,00,000 aren't active anymore. This means India has only one doctor to treat 2,000 people, instead of one doctor for every 1,000. Improving those figures will take time because the number of medical and nursing colleges cannot be hiked overnight to boost the output of medical graduates. The time has come to firmly recognise that health and health care issues cannot be left solely to the Government or public sector entities if India is to meet its health care targets including Millennium Development Goals for 2015. Such immense investments and specialised skills could best be tapped if public-private partnerships were promoted and Private companies encouraged to establish health care infrastructure in all geographies - urban, semi-urban and rural - particularly where primary health care is concerned. Estimated indicate that only 320 million people or 26 percent of India's population are covered under some form of medical insurance - public or private. In other words, large uncovered sections of the populace are forced to meet medical costs via out-of-pocket

spends, causing immense financial burden and pushing many families into poverty.

**Question 7**

**What is/ are the primary reason(s) for the lack of complete success in improving health care in India?**

- A. Total government apathy in this area.**
- B. Policy makers' inability to properly priorities the measures required.**
- C. Shortage of PHCs across the country.**

- A** A only
- B** B only
- C** A & C
- D** A, B & C

**Answer: B**

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**Question 8**

**It is implied in the passage that**

- A** when it comes to primary health care facilities, people from villages and towns are equally at a disadvantage
- B** PHCs established in the country actually become ineffective due to shortage of doctors and medical supplies
- C** the best way to ensure better health care facilities in the country is to privatise them completely
- D** with the will to work, government can improve health care facilities in the country within a short period

**Answer: B**

**Question 9**

**Which of the following statements is/ are true in the context of the passage?**

- A** A country's monetary health is directly affected by the physical health of its citizens
- B** India has lesser number of doctors and nurses than most other countries in the world
- C** Only about one-fourth of India's population has access to health insurance
- D** All these

**Answer: D**

### Question 10

Which of the following statements is/ are not true in the context of the passage?

- A. The Government has failed to correctly assess the requirement of medical colleges in India.
- B. Over 25% of the doctors who register with the Medical Council of India never get into the medical profession.
- C. Private participation in the primary health sector is a must to ensure its success we go forward towards Millennium Development Goals for 2015.

- A A only
- B B only
- C A & B
- D A, B & C

Answer: D

## Daily Free Topic Test

### Instructions

Study the passage below and answer the questions.

PASSAGE - II

With will and vision, India's energy prospects can be changed from grim to green, and the world will benefit as a result. At 571 kWh per capita, India's electricity consumption is one-fifth of China's (2,631 kWh) and less than one - twentieth of the USA's (12,914 kWh). India's electricity demand will only grow. Solar electricity today at Rs.7.50 a kWh is economical compared with subsidised diesel generated power at roughly Rs.15 a unit, but more expensive than coal - based electricity at about Rs.6. And, in any case, India has ash - rich coal. What is the true cost of coal - based power? Prices are distorted by subsidies, State boundaries, vote - bank politics, and uncharged carbon - emission costs. Can India leapfrog into a clean - energy future rather than extend the conventional grid with fossil fuels at its core? In a nation blessed with abundant sunlight, to what extent should electricity be a networking service at all? Could India tap ambient solar energy for most of its needs? India's single - minded focus should be massive and rapid solar deployment, not only through utility - scale solar plants, but also through distributed generation, household - by - household, nationwide. Electricity in Indian homes should be roof top - to - room and solar based with energy self - sufficiency as the goal; the grid can complement and serve as back - up where available. Anchored with solar, the solutions may include combinations with bio - diesel, batteries, wind, biogas, micro - hydro, etc. At night or when the sun is behind clouds, alternative yet local sources can assure electricity. Once solar energy takes root, India will need less of the colossal and wasteful transmission, distribution and generation infrastructure except for industrial operations such as running factories and trains.

### Question 11

Which of the following factors is/ are favouring India's transition to a clean energy future?

- A) India has abundant sunlight.
- B) India's electricity consumption is less than China's or the USA's?
- C) India has ash - rich coal

- A A only
- B A & B
- C A & C

D C only

Answer: A

**Question 12**

It is implied in the passage that

- A 'electricity - for - all' should be the Government's motto
- B traditional electric power should be replaced by solar electric power in India
- C if India transforms itself into a clean energy country, the rest of the world would benefit due to additional electricity available to them
- D All these

Answer: B

**Question 13**

It is not implied in the passage that

- A) India should switch over completely to solar power by installing solar power kits in every household.
- B) by installing solar panels on every roof top, India could make power grids redundant.
- C) per capita energy consumption in China is higher than that in India

A A & B

B B & C

C A & C

D A, B & C

Answer: A

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**Question 14**

It can be inferred from the passage that

- A India is the third - largest producer of electricity in the world
- B solar electricity is not necessarily more expensive than coal - based electricity
- C as of today India, as a country, has energy self - sufficiency
- D All these

Answer: B

**Instructions**

Study the passage below and answer the questions.

Passage - III

The change in the Government's focus, from coveting the cash balances of public sector undertaking (PSUs) to examining how these can be put to better use by them, is a welcome development. In the current investment - starved environment,

there is certainly a strong macro-economic imperative for inducing PSUs to deploy funds in capex programmes. But, from a shareholder's perspective- and that applies to the Government as well - it is also important that funds in excess of their immediate investment needs, estimated at over Rs. 1 lakh crore, earn a reasonable return. This is made difficult by rigid and archaic investment norms. So, it is a double whammy, wherein idle money of state-owned firms neither gets invested in projects nor generates sufficient portfolio returns. The current guidelines on deployment of surplus cash by PSUs decree that 60 percent of these should be parked with public sector banks. The 'public sector' mutual funds requirement is outdated, when many of them promoted by the likes of UTI, SBI and LIC have roped in foreign partners, making these ventures little different from pure private sector fund houses. Now that the investment guidelines are to be reviewed by a Government committee, it may be best for the Government to just stipulate general prudential norms to be followed by PSUs. These norms could emphasise safety liquidity of investments, their diversification across asset classes and securities, and provisions against taking speculative bets, that expose shareholder funds to capital loss risks.

#### Question 15

The objective of the author in writing this article appears to be to

- A advise the government in financial management of the surplus funds of PSUs
- B analyse the possible ways in which PSUs could invest their surplus funds to make the same more productive.
- C ensure better returns for private shareholders.
- D criticise the government for its archaic fiscal and investment policies.

Answer: B

#### Question 16

What are the twin benefits that the author suggests would accrue, if PSUs invest their surplus funds more prudently?

- A Public sector and private sector banks would both get more - money into their coffers.
- B Both the Government and private shareholders would earn more returns on their investments in PSU shares.
- C Projects meant for general public good would get funds more readily; while the funds themselves earn good returns instead of being idly parked.
- D None of these

Answer: B

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#### Question 17

It is implied in the passage that the Government.

- A) had hitherto been unjustly siphoning off the surplus funds of PSUs.
- B) is bereft of ideas when it comes to deciding where to park the surplus funds of PSUs
- C) had always favoured channelising the surplus funds of PSUs into public sector banks.

A A only



B B only

C C only

D A & B

Answer: B

#### Question 18

Which of the following statements about mutual funds is not true in the context of the passage?

A 'Public Sector' mutual fund company is a misnomer now, as most of these companies have got 'foreign', private partners.

B Mutual funds of private sector banks alone give good returns

C Every PSU has to invest at least 30% of its cash surplus in public sector mutual funds

D All these

Answer: C

#### Instructions

Study the passage below and answer the questions.

PASSAGE - IV

The first requirement to ensure nuclear safety is technical expertise which India has. No questions have been raised so far about the expertise in Department of Atomic Energy (DAE). The first reactors were imported. Soon after commissioning the original suppliers left leaving us to fend for ourselves. The reactors have been running for decades without any serious environmental issues. More reactors have since been built indigenously with enhanced safety features, and increased power rating. Continuous monitoring of these shows negligible environmental impact compared to that arising from natural background radiation. All of this as possible because of the expertise available in DAE institutions. In the early years, there was self-regulation of safety. It had to be so because there was no other group working in this field. It worked very well. As the programme expanded, a full-time regulatory body was needed and, so, the Atomic Energy Regulatory Board (AERB) came into being. Continuing absence of education and research a nuclear technology in academic institutions meant the AERB had to be staffed with experts transferred to it from DAE units. AERB also had to rely on expertise in DAE for various kinds of analyses. This was facilitated by the AERB being under the Atomic Energy Commission (AEC). Information that ought to have been disseminated in the first place was not available to the public. This has naturally tended to imputed motives on attitude of AERB and DAE to safety. An independent regulator is being demanded as the answer. Steps have to be initiated in the direction now. Meanwhile, reliance on expertise in DAE institutions is inevitable. If total independence now is impractical and expertise outside DAE is unavailable, only total transparency on the part of AERB and DAE can redeem the situation. This had not yet come about. If a larger contribution from nuclear energy is required, more effort is needed to effectively answer public questions on plant safety and to dispel needless fear of radiation. A brand new independent agency to be set up now to regulate nuclear safety may please some people, but would find it difficult to cope with the demands of an expanding programme with new designs.

#### Question 19

Which of the following statements about India's nuclear capability building is/are true?



- A India has depended on foreign countries to set up the first nuclear reactors in India
- B To this day India continues to be dependent on foreign countries for maintenance of its nuclear installations.
- C India has never faced any issues related to environment at its nuclear installations.
- D All these

Answer: A

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### Question 20

How is the safety of nuclear reactors in India ensured?

- A By keeping usage of radio-active-material to the minimum
- B By locating the reactors in distant places, far from human habitation.
- C By ensuring regular inspections by experts available in India
- D None of these

Answer: C

### Question 21

The author is of the view that

- A there is severe lack of educational programmes in the field of nuclear technology in India.
- B the Government agencies have failed to suitably assure the public that the nuclear reactors installed in India pose no threat in general.
- C nuclear energy can play a bigger role than present in India.
- D All these

Answer: B

### Question 22

All of the following statements are implied in the passage except

- A the foreign suppliers of India's first nuclear reactors abandoned them right after installation.
- B indigenous technical expertise is enough to ensure the safety of Indian nuclear power installations
- C nuclear radiation is not a factor to be feared by the people of India.
- D no new regulatory body is required to ensure nuclear safety in India.

Answer: D

## Daily Free Topic Test

### Instructions

Study the passage below and answer the questions.

PASSAGE - V

Apprehensive that pharma companies may stop or reduce production of essential drugs after they come under price control, the Government is mulling steps to ensure that companies maintain present levels of output of these critical drugs. Sources said the recent decision to put a price cap 348 drugs was accompanied by a concern that the manufactures could lose interest in these medicines owing to reduced margins of profit. It was based on the past experience when the drug price control was first enacted. The Group of Ministers (GoM) that took the landmark decision directed the Department of Pharmaceutical to ensure that present production levels were maintained after the price control. As a follow-up, sources said, the Government could fix mandatory level of production in these drugs for each company in business. The fear over companies retaliating with decrease production revolves around the fact the price control would check profit margins. Once the essential medicines are brought under the Drug Price Control Order, they cannot be sold at a price higher than that fixed by the Government. A senior official said, "We will ensure that accessibility and availability of essential drugs does not go down". The GoM has also decided that the prices of medicines, which are part of the price control order of 1995 but not in the National List of Essential Medicines 2011, would be frozen for a year and thereafter a maximum increase of 10% per annum would be permitted. Out of the 348 medicines, the prices of 37 drugs are controlled by the National Pharmaceutical Pricing Authority (NPPA). The Government, through the NPPA, controls prices of 74 bulk drugs and their formulations.

### Question 23

Which of the following is not outlined in the passage as a possible retaliatory measure of the pharma companies?

- A. Altogether stopping production of the 348 essential drugs put under price control.
- B. Reducing production of non essential drugs.
- C. Strive to get the 348 drugs out of the list of essential drugs.

- A A & B
- B B & C
- C A & C
- D A, B & C

Answer: D

### Question 24

It is implied in the passage that

- A mandatory levels of production of essential drugs had hitherto never been in existence India
- B Government control on drugs prices would directly affect their profit margins
- C Both a and b
- D Neither a nor b

Answer: C

**Question 25**

**Which of the following is/ are the outcome(s) of the enactment of Drugs Price Control Order?**

- A The Government has also decided to take up widespread distribution of essential drugs.
- B There is widespread resentment against this law; chiefly by the drug manufacturers
- C The Department of Pharmaceutical has been formed to ensure proper implementation of the price control mechanism
- D None of these

**Answer: D**

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**Question 26**

**In India the government fixes the prices of**

- A all medicines
- B essential drugs only
- C bulk drugs only
- D None of these

**Answer: B**

**Instructions**

Fill in the blanks.

**Question 27**

**Jayashree was habitually so docile and ..... that her friends could not understand her sudden ..... her employers.**

- A accommodating, outburst against
- B calm, anger for
- C truculent, virulence toward
- D quiet, annoyance toward

**Answer: A**

**Question 28**

**Carried away by the ..... effect of the experimental medication, the patient ..... his desire to continue as a subject for as long as he could.**

- A supplementary, announced
- B soothing, proclaimed
- C satisfying, repeated

D salutary, reiterated

Answer: C

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### Question 29

As several shops have ..... across the street, the old directory is .....

A relocated, obsolete

B moved, wasteful

C transferred, useless

D travelled, redundant

Answer: A

### Instructions

Choose the order of the sentences marked A, B, C, D and E to form a logical paragraph.

### Question 30

A) Easy or not, etiquette is important

B) There's a reason for doing things the way we do them -- we just have no idea what it is.

C. I had to interrupt my cell phone call to tell him off.

D. I was trying to explain this the other night to my children -- Matt, 15, and Becky, 11 --- who, I'm ashamed to say, have been allowed to develop less than perfect manners, especially at the table.

E. At this particular family dinner, I caught Matt buttering his backed potato with his finger.

A ABCDE

B ABDEC

C BCDAE

D BDACE

Answer: B

### Question 31

A. "Are you all right?" I asked, as I helped her to her seat. "That turbulence was as bad as it gets."

B. Flying in the summer means one thing: turbulence.

C. I was working as a flight attendant when we hit a patch of very rough air just after a young teenager, obviously on her first flight, had entered the bathroom.

D. After the bumps had subsided, she exited the bathroom, a look of sheer terror etched on her face.

E. "So that's what it was," she said, "I thought I'd pushed the wrong button."

A DAEBC

B BCDAE

C AEBDC

D CADBE

Answer: B

Question 32

- A. But, transportation is difficult and the Pantanal is little known outside of Brazil.
- B. The people who live here have their fingers crossed.
- C. Because if ecotourism doesn't work, there is no alternative waiting.
- D. There are now some 60-odd tourist facilities here, most of them small and locally owned.
- E. Worldwide, the jury is still out on the idea of ecotourism and the Pantanal has become a testing ground.

A EDABC

B DAEBC

C ECBAD

D EDCBA

Answer: C

Question 33

- A. And then suppose you pushed the 'Reverse' button and took a trip in the opposite direction journeying into the dim recesses of the past.
- B. Just suppose you could clamber aboard a Time Machine and press the 'Forward' button.
- C. You might just land right into your favourite period of history.
- D. Zap... would you hurtle forward through a blinding flash of days and nights, months and years-- even long centuries--- perhaps, to land into an alien world of the future....?
- E. A world that will be a marvel of technology.

A CDABE

B CBADE

C BDEAC

D BDECA

Answer: D

Instructions

Rearrange the jumbled alphabets in the following four options and find the odd word among them.

Question 34

A OTLLABFO

B NDPGOYLUAR

C AOHCC

D IONSNTCTOTIC

Answer: D

**Question 35**

- A SSSROCIS
- B BELDA
- C FIENK
- D DIDLCNKOR

**Answer: D**

**Question 36**

- A YOJ
- B SNAPIHSPE
- C TEIHGTEDMNL
- D RHICA

**Answer: D**

**Instructions**

Each of these questions has a text portion followed by four alternative summaries. Choose the option that best captures the essence of the text.

**Question 37**

**An employee who is given the financial support and resources to create new products or systems is called an intrapreneur. Some of the greatest business leaders of the past made their early mark in business as intrapreneurs. Most progressive organisations view intrapreneurship as a way to develop and retain the best manpower and provide an entrepreneurial atmosphere within the organisation. It also adds to the potential of an otherwise static organisation.**

- A An entrepreneur works independently to setup a business venture while an intrapreneur does the same thing for the company he works for.
- B Intrapreneurship helps organisations to nurture and retain the best of talent for mutual benefit.
- C Big companies encourage intrapreneurship which, in turn, throws up future entrepreneurs.
- D While entrepreneurship is a well known concept, intrapreneurship is an emerging concept.

**Answer: C**

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**Question 38**

**Health these days is being threatened by a growing phenomenon. Bacteria that cause common life threatening infections are becoming increasingly resistant to antibiotics. This is due to the widespread use and misuse of such antibiotics. Antimicrobial resistance needs immediate attention. Self-medication should be discouraged. Asepsis should be the gospel for the prevention of infection.**

- A Reckless use of antibiotics, the main cause of drug resistant bacteria, has led to a serious health challenge.
- B Over the counter availability of antibiotics encourages self - medication.
- C Keeping our surroundings germ - free can curb the need of antibiotics.
- D Mutated drug resistant bacteria are a serious threat to our life.

Answer: C

#### Question 39

**Satyagraha, a philosophy and practice of non-violent resistance, has the power to shame the powerful because it makes a moral statement before the society. But it is only effective when the practitioner acquires the moral right to undertake the action. Only a principled person can carry Satyagraha to its logical end. Any regime, liberal or illiberal, finds it tough to suppress this movement. This weapon of truth and non-violence rarely fails provided it is used selflessly in public interest. Satyagraha become Duragraha if it is used as blackmail.**

- A Satyagraha has time and again proved a powerful tool to fight for a just cause.
- B Satyagraha is a battle which is sure to win over the opponents.
- C Unfail demands through Satyagraha amount to blackmailing and are anti to the spirit of Satyagraha.
- D The success of Satyagraha depends on the integrity, morality and uprightness of the person as well as the fairness of the cause.

Answer: D

#### Question 40

**For long, sociologists have warned of the dire consequences of an increasingly skewed sex ratio. A falling sex ratio is a cumulative process which could lead to more crimes and violence against women. Without enough brides, men would be forced to purchase wives leading to human trafficking. This, in turn, would lead to insecure parents resorting to even more female foeticide and keeping girls indoors out of fear of their protection. In the long run all the gains made in pushing for greater female literacy and empowerment could be undone.**

- A The indiscriminate female foeticide has a potential to create an imbalance in our society and can push women empowerment backwards.
- B The imbalance in male and female ratio can give rise to more crimes against women.
- C Deficit in female population can lead to defunct family system.
- D Skewed male female sex ratio has a potential to reduce women's statue in society.

Answer: B

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**Mathematical Skills**

Instructions



For the following questions answer them individually

**Question 41**

A and B can separately do a piece of work in 20 and 15 days, respectively. They worked together for 6 days, after which B was replaced by C. If the work was finished in the next 4 days, then the number of days in which C alone could do the work will be

- A 60 days
- B 40 days
- C 35 days
- D 30 days

**Answer: B**

**Explanation:**

Work done by A in one day =  $\frac{1}{20}$  and work done by B in one day =  $\frac{1}{15}$

Work done by both A and B in one day =  $\frac{1}{20} + \frac{1}{15} = \frac{7}{60}$

Work done by A and B in 6 days =  $\frac{7}{60} \times 6 = \frac{7}{10}$

Remaining work =  $1 - \frac{7}{10} = \frac{3}{10}$

Now, Time taken by A and B to complete the work in next 4 days is given by

$\Rightarrow$  (Remaining work / (A + C)'s efficiency) = Remaining time to complete the work.

$$\Rightarrow \frac{\frac{3}{10}}{\frac{1}{20} + \frac{1}{C}} = 4 \text{ days}$$

$$\Rightarrow \frac{3}{10} = 4\left(\frac{1}{20} + \frac{1}{C}\right)$$

$$\Rightarrow \frac{3}{10} = \frac{4}{20} + \frac{4}{C} \Rightarrow \frac{4}{C} = \frac{3}{10} - \frac{1}{5}$$

$$\Rightarrow \frac{1}{C} = \frac{1}{40} \text{ (or) } C = 40 \text{ days}$$

Hence, option B is the correct answer.

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**Question 42**

B can do a piece of work in 6 hours, B and C together can do it in 4 hours, and A, B and C together in  $2\frac{2}{3}$  hours. In how many hours can A and B together do the same piece of work?

- A 11 hours
- B  $6\frac{1}{7}$  hours
- C  $2\frac{3}{7}$  hours
- D  $3\frac{3}{7}$  hours

**Answer: D**

**Explanation:**

Work done by B in one hour =  $\frac{1}{6}$

Work done by B and C together in one hour =  $\frac{1}{B} + \frac{1}{C} = \frac{1}{6} + \frac{1}{12} = \frac{1}{4}$

Work done by A, B and C together in one hour,

$$\frac{1}{A} + \frac{1}{B} + \frac{1}{C} = \frac{3}{8}$$

$$\frac{1}{A} + \frac{1}{6} + \frac{1}{12} = \frac{3}{8}$$

$$\frac{1}{A} = \frac{3}{8} - \frac{1}{6} - \frac{1}{12}$$

$$\frac{1}{A} = \frac{9-4-2}{24} = \frac{3}{24} = \frac{1}{8}$$

Work done by A and B together in one hour =  $\frac{1}{A} + \frac{1}{B} = \frac{1}{8} + \frac{1}{6} = \frac{7}{24}$

Total work done by A and B together =  $\frac{24}{7}$  (or)  $3\frac{3}{7}$  hours

Hence, option D is the correct answer.

#### Question 43

X can do  $\frac{1}{4}$  of a work in 10 days, Y can do 40% of the work in 40 days and Z can do  $\frac{1}{3}$  of the work in 13 days. Who will complete the work first?

- A X
- B Y
- C Z
- D X & Z both

Answer: C

#### Explanation:

Given, X can complete  $\frac{1}{4}$  of the work in 10 days i.e he can complete the whole work in  $10 \times 4 = 40$  days

Y can do 40% of the work in 40 days i.e he can complete the whole work in  $40 \times \frac{1}{0.4} = 100$  days

Z can do  $\frac{1}{3}$ rd of the work in 13 days i.e he can complete the whole work in  $13 \times 3 = 39$  days

Z will complete the work first.

Hence, option C is the correct answer.

#### Question 44

A can do a piece of work in 7 days of 9 hours each where as B can do the same work in 6 days of 7 hours each. How long will they take to do the work together, working  $8\frac{2}{5}$  hours a day?

- A 2 days
- B 3 days
- C  $3\frac{1}{7}$  days
- D  $4\frac{2}{5}$  days

Answer: B

#### Explanation:

Work done by A and B in 1 hr per day =  $\frac{1}{63} + \frac{1}{42} = \frac{5}{126}$

Number of hours they are required to work =  $\frac{42}{5}$  hours

Number of days required =  $\left(\frac{5}{126}\right) \div \left(\frac{42}{5}\right)$

=  $\frac{126}{5} \times \frac{5}{42} = 3$  days

=> Ans - (B)

## Daily Free Topic Test

### Question 45

When 5 percent is lost in grinding wheat, a country has to import 20 million bags to make up of the loss. But when only 2 percent is lost, it has to import 15 million bags. What is the quantity of wheat which grows in the country in million bags?

- A  $133\frac{1}{3}$
- B 150
- C  $106\frac{2}{3}$
- D  $166\frac{2}{3}$

**Answer:** D

#### Explanation:

Given, when 5 percent is lost in grinding wheat, the country has to import 20 million bags to make up of the loss,

5% of wheat = 20 million bags .....(1)

When only 2 percent is lost, it has to import 15 million bags,

2% of wheat = 15 million bags .....(2)

From equation (1) and (2)

3% of wheat = 5 million and  $100\% = \frac{500}{3} = 166\frac{2}{3}$

Hence, option D is the correct answer.

### Question 46

In a consumer preferences survey, 20% respondents opted for product A whereas 60% opted for product B. The remaining individuals were undecided. If the difference between those who opted for product B and those who were undecided is 720, how many individuals had been interviewed for the survey?

- A 1440
- B 1800
- C 3600
- D Data inadequate
- E

**Answer:** B

#### Explanation:

Let the total number of individuals who had been interviewed for the survey = 'x'

Number of respondents who had opted for product A = 20% of x

Number of respondents who had opted for product B = 60% of x

Number of respondents who had opted for none of the products = 20% of x (remaining part out of 100%)

Difference between those who opted for product B and those who were undecided is 720.

$$\Rightarrow (60\% - 20\%)x = 720$$

$$\Rightarrow 40\% \text{ of } x = 720 \text{ (or) } x = 720 \left( \frac{100}{40} \right) \text{ (or) } x = 1800$$

Hence, option B is the correct answer.

Question 47

Gauri went to the stationers and bought items worth Rs.25, out of which 30 paise went on sales tax on taxable purchases. If the tax rate was 6%, then what was the cost of the tax-free items?

- A Rs.15
- B Rs.15.70
- C Rs.19.70
- D Rs.20

Answer: C

**Explanation:**

Cost price of items bought by Gauri in the stationers = 25

Price after deducting sales tax =  $25 - 0.30 = 24.70$

Let the amount of sales tax on taxable purchases be  $x$

Then,  $6\%$  of  $x = 0.3$  rs

$$x = (0.3) \left( \frac{100}{6} \right)$$

$$x = 5$$

Cost price of the tax free items =  $24.70 - 5 = 19.70$

Hence, option C is the correct answer.

## MAT Free Solved Previous Papers

Question 48

Shyam had three note books X, Y and Z. Of these, X had 120 pages, Y had 10% more and Z had 10% less. If he tore out 5%, 10% and 15% of pages in X, Y and Z respectively, then what percent of total pages did he tear out?

- A 8%
- B 15%
- C 7%
- D None of these

Answer: D

**Explanation:**

Total number of books shyam had,

$$X = 120, Y = (1.1 \times 120) = 132, Z = (0.9 \times 120) = 108$$

Total number of books he tore,

$$X = 5\% \text{ of } X = (0.05 \times 120) = 6$$

$$Y = 10\% \text{ of } Y = (0.1 \times 132) = 13.2$$

$$Z = 15\% \text{ of } Z = (0.15 \times 108) = 16.2$$

Percentage of books he tore,

$$\Rightarrow \frac{6+13.2+16.2}{120+132+108} \times 100$$

$$\Rightarrow \frac{35.4}{360} \times 100 = 9.83\%$$

Hence, option D is the correct answer.

**Question 49**

A bag contains 4 five rupee coins, 3 two rupee coins and 3 one rupee coins. If 6 coins are drawn from the bag at random, what are the odds in favour of the draw yielding maximum amount?

- A 1 : 70
- B 1 : 69
- C 69 : 70
- D 70 : 1

**Answer:** C

**Explanation:**

Total number of coins in the bag =  $4 + 3 + 3 = 10$

If 6 coins are drawn from the bag at random, then the probability that the draw yields maximum amount is given by,

$$= \frac{{}^4C_4 \times {}^3C_2}{{}^{10}C_6}$$

$$= \frac{1 \times 3}{210}$$

$$= \frac{1}{70}$$

$$\text{Odds in favour of the draw} = 1 - \frac{1}{70} = \frac{69}{70}$$

Hence, option C is the correct answer.

**Question 50**

Varun throw two unbiased dice together and gets a sum of 7. If his friend Tarun then throws the same two dice, what is the probability that the sum is less than 7?

- A  $\frac{1}{6}$
- B  $\frac{7}{12}$
- C  $\frac{1}{2}$
- D  $\frac{5}{12}$

**Answer:** D

**Explanation:**

The number of possibilities where the sum is less than '7' is,

(1,1), (1,2), (1,3), (1,4), (1,5), (2,1), (2,2), (2,3), (2,4), (3,1), (3,2), (3,3), (4,1), (4,2), (5,1)

There are 15 possibilities out of 36(6 x 6) possible outcomes.

∴ The probability that the sum is less than 7 is,

$$\Rightarrow \frac{15}{36} = \frac{5}{12}$$

Hence, option D is the correct answer.

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**Question 51**

In a factory where toys are manufactured, machines A, B and C produce 25%, 35% and 40% of the total toys, respectively. Of their output, 5%, 4% and 2% respectively, are defective toys. If a toy drawn at random is found to be defective, what is the probability that it is manufactured on machine B?

- A  $\frac{17}{69}$
- B  $\frac{28}{69}$
- C  $\frac{35}{69}$
- D None of these

**Answer: B**

**Explanation:**

Let  $E_1$ ,  $E_2$  and  $E_3$  be the events that the toys are produced by the machines A, B and C respectively.

Probability of toys manufactured by A i.e  $P(E_1) = \frac{25}{100}$

Probability of toys manufactured by B i.e  $P(E_2) = \frac{35}{100}$

Probability of toys manufactured by C i.e  $P(E_3) = \frac{40}{100}$

Let D be the event of the toy being defective.

Now,  $P(D|E_1) = \frac{5}{100}$ ;  $P(D|E_2) = \frac{4}{100}$ ;  $P(D|E_3) = \frac{2}{100}$

Probability that the toy drawn at random is defective and is manufactured on machine B,

$$P(B|D) = \frac{P(E_2)P(D/E_2)}{P(E_1)P(D/E_1) + P(E_2)P(D/E_2) + P(E_3)P(D/E_3)}$$

$$P(B|D) = \frac{(35/100)(4/100)}{(25/100)(5/100) + (35/100)(4/100) + (40/100)(2/100)}$$

$$P(B|D) = \frac{(35 \times 4)}{(25 \times 5) + (35 \times 4) + (40 \times 2)}$$

$$P(B|D) = \frac{140}{125 + 140 + 80}$$

$$P(B|D) = \frac{140}{345}$$

$$P(B|D) = \frac{28}{69}$$

Hence, option B is the correct answer.

**Question 52**

A and B alternately throw a pair of dice. A wins if he throws 6 before B throws 7; and B wins if he throws 7 before A throws 6. What are their respective chances of winning, if A throws the dice first?

- A  $\frac{13}{61}, \frac{31}{61}$
- B  $\frac{30}{61}, \frac{31}{61}$
- C  $\frac{31}{61}, \frac{41}{61}$
- D  $\frac{38}{61}, \frac{28}{61}$

**Answer: B**

**Explanation:**

The probability that A throws '6' =  $\frac{5}{36}$  and

The probability of A not getting '6' =  $1 - \frac{5}{36} = \frac{31}{36}$

The probability that B throws '7' =  $\frac{6}{36}$

The probability of A winning the game is given by,

= (In the first throw if A wins) or (In the 1st throw A loses, B also loses and in the 2nd throw A wins) or (A and B loses in the 1st and

2nd throw's and A wins in the 3rd throw .....it goes on like that)

$$= \frac{5}{36} + \frac{31}{36} \cdot \frac{30}{36} \cdot \frac{5}{36} + \frac{31}{36} \cdot \frac{30}{36} \cdot \frac{31}{36} \cdot \frac{30}{36} \cdot \frac{5}{36} + \dots$$

It is in arithmetic progression,

$$= \left(\frac{5}{36}\right) \left(1 - \frac{31}{36} \cdot \frac{30}{36}\right)$$

$$= \left(\frac{5}{36}\right) (1296 - 930)$$

$$= \left(\frac{5}{36}\right) \left(\frac{1296}{366}\right)$$

$$= \frac{5 \times 6}{61} = \frac{30}{61}$$

Probability of B winning the game is given by,

$$= 1 - \frac{30}{61}$$

$$= \frac{31}{61}$$

Hence, option B is the correct answer.

### Question 53

What will be the ratio of simple interest earned by a certain amount at the same rate of interest for 6 years and 9 years?

- A 1 : 3
- B 1 : 4
- C 2 : 3
- D Data inadequate

**Answer: C**

### Explanation:

Ratio of simple interest earned by a certain amount at the same rate of interest for 6 years and 9 years is

$$\frac{P_1 \times R_1 \times t_1}{100} : \frac{P_2 \times R_2 \times t_2}{100}$$

Where,  $P_1$  and  $P_2 = P$ ;  $R_1$  and  $R_2 = R$  (as the principle and rate of interest for both the cases are same)

$$t_1 = 6 ; t_2 = 9$$

$$\frac{P \times R \times 6}{100} : \frac{P \times R \times 9}{100}$$

$$6 : 9 \text{ (or) } 2 : 3$$

Hence, option C is the correct answer.

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### Question 54

An automobile financier claims to be lending money at simple interest but he includes the interest every six months for calculating the principal. If he is charging an interest of 10%, the effective rate of interest becomes

- A 10%
- B 10.25%
- C 10.5%
- D None of these

**Answer: B**



**Explanation:**

Let the principle amount be 100

$$\text{Simple interest for first 6 months} = \frac{100 \times 1 \times 10}{100 \times 2} = 5$$

$$\text{Simple interest for next 6 months} = \frac{105 \times 1 \times 10}{100 \times 2} = 5.25$$

$$\text{Total principle amount after 1 year} = 100 + 5 + 5.25 = 110.25$$

$$\text{Effective rate of interest} = 10.25\%$$

Hence, option B is the correct answer.

**Question 55**

A sum of money lent at compound interest for 2 years at 20% per annum would fetch Rs.482 more. If the interest was payable half yearly than if it was payable annually, the sum is

- A Rs.10,000
- B Rs.20,000
- C Rs.40,000
- D Rs.50,000

**Answer: B**

**Explanation:**

Let the amount payable be P

$$\text{Compound interest when compounded half-yearly} = P\left(1 + \frac{R}{2 \times 100}\right)^{2t} - P$$

$$\Rightarrow P\left(1 + \frac{10}{100}\right)^4 - P$$

$$\Rightarrow P\left[\left(\frac{11}{10}\right)^4 - 1\right] \Rightarrow P\left[\frac{14641 - 10000}{10000}\right] = \frac{4641}{10000}P$$

$$\text{Compound interest when compounded annually} = P\left(1 + \frac{R}{100}\right)^t - P$$

$$\Rightarrow P\left(1 + \frac{20}{100}\right)^2 - P$$

$$\Rightarrow P\left(1 + \frac{1}{5}\right)^2 - P \Rightarrow P\left(\frac{6}{5}\right)^2 - P = P\left[\left(\frac{36}{25}\right) - 1\right]$$

$$\Rightarrow P\left(\frac{11}{25}\right)$$

According to the given question,

$$P\left(\frac{4641}{10000}\right) - P\left(\frac{11}{25}\right) = 482$$

$$P\left(\frac{4641 - 4400}{10000}\right) = 482$$

$$P = \frac{4820000}{241} \text{ (or) } P = 20,000.$$

Hence, option B is the correct answer.

**Question 56**

Sultan took a loan from the bank at 8% per annum, and was supposed to pay a sum of Rs.2240 at the end of 4 years. If the same sum is cleared off in four equal annual installments at the same rate, the amount of annual installment will be

- A Rs.500
- B Rs.550
- C Rs.600
- D Rs.1000

**Answer: A**

**Explanation:**

Let the amount of annual installment be 'P'

The amount for 1 year,

$$\Rightarrow P + \frac{P \times 1 \times 8}{100} = \frac{27P}{25}$$

The amount for 2 years,

$$\Rightarrow P + \frac{P \times 2 \times 8}{100} = \frac{29P}{25}$$

The amount for 3 years,

$$\Rightarrow P + \frac{P \times 3 \times 8}{100} = \frac{31P}{25}$$

From the given question,

$$\therefore \frac{27P}{25} + \frac{29P}{25} + \frac{31P}{25} = 2240$$

$$\Rightarrow \frac{27P + 29P + 31P}{25} = 2240$$

$$\Rightarrow \frac{112P}{25} = 2240 \Rightarrow P = \frac{2240 \times 25}{112} = 500$$

Hence, option A is the correct answer.

## Daily Free Topic Test

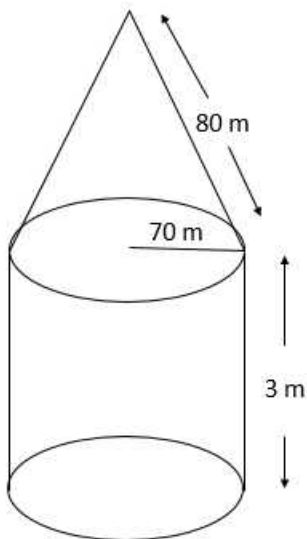
### Question 57

A Circus tent is cylindrical to a height of 3 m and conical above it. If the diameter of the base is 140 m and the slant height of the conical portion is 80 m, the length of canvas 2 m wide required to make the tent is

- A 8960 m
- B 9660 m
- C 9460 m
- D 9860 m

**Answer: C**

**Explanation:**



Surface area of the tent =  $2\pi rh + \pi r l$

$$= \pi r(2h + l)$$

$$= \frac{22}{7} \times 70(2 \times 3 + 80)$$

$$= 18920$$

Width of the canvas = 2m

$$\therefore \text{Length of the Canvas required to make the tent} = \frac{18920}{2} = 9460 \text{ m}$$

Hence, option C is the correct answer.

#### Question 58

The ratio between the length and breadth of a rectangular park is 3 : 2. If a man cycling along the boundary of the park at the speed of 12 km/h completes one round in 8 minutes, then the area of the park in sq. m is

A 15360

B 153600

C 30720

D 307200

Answer: B

#### Explanation:

Let length and breadth of the rectangular park be  $3x$  and  $2x$

Distance covered by the man cycling around the park (in meters) is given by,

$$12 \times \frac{5}{18} \times 8 \times 60 = 1600$$

Perimeter of the rectangular park is equal to 1600

$$\therefore 2(3x + 2x) = 1600$$

$$5x = 800 \text{ (or) } x = 160$$

$$\text{Area of the park} = 6x^2$$

$$= 6(160 \times 160)$$

$$= 153600 \text{ sq.m}$$

Hence, option B is the correct answer.

#### Question 59

If the numbers representing volume and surface area of a cube are equal, then the length of the edge of the cube in terms of the unit of measurement will be

A 3

B 4

C 5

D 6

Answer: D

#### Explanation:

Let the length of the edge of the cube be 'a'

Then according to the question,

$$a^3 = 6a^2$$

$$a = 6$$

Hence, option D is the correct answer.

## MAT Free Solved Previous Papers

Question 60

A metal sheet 27 cm long, 8 cm broad and 1 cm thick is melted into a cube. The difference between the surface area of the two solids, is

- A  $284 \text{ cm}^2$
- B  $296 \text{ cm}^2$
- C  $286 \text{ cm}^2$
- D  $300 \text{ cm}^2$

Answer: C

Explanation:

Surface area of the metal sheet =  $2(lb + bh + hl)$

$$= 2(27 \times 8 + 8 \times 1 + 1 \times 27)$$

$$= 2(216 + 8 + 27)$$

$$= 2(251) = 502 \text{ cm}^2$$

Edge of the cube which is formed after melting =  $l \times b \times h$

$$\text{i.e. } a^3 = 27 \times 8 \times 1 \text{ (or) } a = 6$$

$$\text{Surface area of the cube} = 6a^2 = 216$$

$$\text{Required difference} = 502 - 216 = 286 \text{ cm}^2$$

Hence, option C is the correct answer.

Question 61

A, B and C have 40,  $x$  and  $y$  balls, respectively. If B gives 20 balls to A, he is left with half as many balls as C. If together they had 60 more balls, each of them would have had 100 balls on an average. What is the ratio of  $x$  to  $y$ ?

- A 3 : 2
- B 2 : 3
- C 2 : 1
- D 3 : 4

Answer: B

Explanation:

If together they had 60 more balls, each of them would have had 100 balls on an average,

$$\frac{40 + X + Y + 60}{3} = 100$$

$$X + Y + 100 = 300 \Rightarrow X + Y = 200 \dots \dots (1)$$

If B gives 20 balls to A, he is left with half as many balls as C,

$$X - 20 = \frac{1}{2} Y$$

$$2X - 40 = Y \text{ (or) } 2X - Y = 40 \dots \dots (2)$$

Add equations (1) and (2)

$$3X = 240 \text{ (or) } X = 80$$

Substitute  $X$  value in equation (1)

$$80 + Y = 200 \text{ (or) } Y = 120$$

$$X : Y = 80 : 120 \text{ (or) } 2 : 3$$

Hence, option B is the correct answer.

#### Question 62

There are a total of 43800 students in 4 schools of a city. Half the number of students of the first school, two-thirds of the second, three-fourth of the third and four-fifths of the fourth are all equal. What is the ratio of the number of students of A to D, if A, B, C and D be the first, second, third and fourth schools, respectively?

A 8 : 5

B 1 : 3

C 2 : 3

D 7 : 9

Answer: A

#### Explanation:

Given,

Total number of students in 4 schools of a city = 43,800 and

$$\frac{1}{2}(A) = \frac{2}{3}(B) = \frac{3}{4}(C) = \frac{4}{5}(D)$$

$$A : B = 4 : 3 \text{ and}$$

$$B : D = 6 : 5$$

$$\text{Now, } A : B : D = 8 : 6 : 5$$

$$A : D = 8 : 5$$

Hence, option A is the correct answer.

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#### Question 63

Four numbers are in proportion. The sum of the squares of the four numbers is 50 and the sum of the mean is 5. The ratio of first two terms is 1 : 3. What is the average of the four numbers?

A 1

B 3

C 5

D 6

Answer: B

#### Explanation:

Let the four numbers be 'a', 'b', 'c' and 'd'

Given ratio of first two numbers is 1:3 and four numbers are in proportion,

$$\therefore a : b = c : d = 1 : 3$$

$$\Rightarrow b = 3a \text{ and } d = 3c$$

Sum of the squares of the four numbers = 50

$$\Rightarrow a^2 + b^2 + c^2 + d^2 = 50$$

$$\Rightarrow a^2 + 9a^2 + c^2 + 9c^2 = 0$$

$$\Rightarrow 10a^2 + 10c^2 = 0$$

$$\Rightarrow a^2 + c^2 = 0 \dots \dots (1)$$

Sum of the means = 5

$$b + c = 5$$

$$3a + c = 5 \text{ (as } b = 3a)$$

$$a = \frac{5-c}{3} \dots \dots \dots (2)$$

From equations (1) and (2)

$$\left(\frac{5-c}{3}\right)^2 + c^2 = 0$$

$$\frac{25+c^2-10c}{9} + c^2 = 5$$

$$25 + c^2 - 10c + 9c^2 = 5$$

$$10c^2 - 10c + 20 = 0$$

$$c^2 - c + 10 = 0$$

After solving the equation we get,  $c = 2$ .

Substitute the value of 'c' in equation (2)

$$a = \frac{5-2}{3} \text{ (or) } a = 1$$

$$\text{We know } b = 3a \text{ (or) } b = 3$$

$$\text{We know } d = 3c \text{ (or) } d = 6$$

Average of the four numbers,

$$= \frac{1+3+2+6}{4}$$

$$= 3$$

Hence, option B is the correct answer.

#### Question 64

The concentration of petrol in three different mixtures (of petrol and kerosene) is  $\frac{1}{2}$ ,  $\frac{3}{5}$  and  $\frac{4}{5}$  respectively. If 2 litres, 3 litres and 1 litre are taken from these three different vessels and mixed, what is the ratio of petrol and kerosene in the new mixture?

- A 4 : 5
- B 3 : 2
- C 3 : 5
- D 2 : 3

**Answer: B**

#### Explanation:

Quantity of Petrol in the mixture,

$$\begin{aligned} &= \frac{1}{2} \times 2 + \frac{3}{5} \times 3 + \frac{4}{5} \times 1 \\ &= 1 + \frac{9+4}{5} \\ &= \frac{18}{5} \end{aligned}$$

Quantity of kerosene in the mixture,

$$\begin{aligned} &= \frac{1}{2} \times 2 + \frac{2}{5} \times 3 + \frac{1}{5} \times 1 \\ &= 1 + \frac{6+1}{5} \end{aligned}$$

$$= \frac{12}{5}$$

Ratio of petrol and kerosene in the mixture,

$$= \frac{18}{5} : \frac{12}{5}$$

$$= 3 : 2$$

Hence, option B is the correct answer.

#### Question 65

A company CEO invited nine persons for a business meeting, where the host will be seated at a circular table. How many different arrangements are possible if two invitees X and Y be seated on either side of the host CEO?

A 10080

B 10800

C 9200

D 4600

**Answer: A**

#### Explanation:

Number of persons in the meeting = 9 + 1(host) = 10 persons

Except X, Y and the host the number of ways the other 7 persons are arranged = 7!

Now, X and Y can be seated on either side of the host i.e in 2 ways.

Total number of ways = 7! x 2 = 10080

Hence, option A is the correct answer.

## Free Gk Tests

#### Question 66

Find the number of ways in which ten different flowers can be strung together to make a garland in such a way that three particular flowers are always together?

A 30240

B 30420

C 23400

D None of these

**Answer: D**

#### Explanation:

Three particular flowers are taken as '1' as these flowers are taken together.

Now total number of flowers is '8' and these flowers can be arranged in 8! ways. And

Three particular flowers are arranged in 3! ways.

Total number of ways = 8! x 3! = 241920

Hence, option D is the correct answer.

#### Question 67

A committee of 3 experts is to be selected out of a panel of 7 persons. Three of them are engineers, Three are managers and, one is both engineer and manager. In how many ways can the committee be selected if it must have atleast one engineer and one manager?



- A 33
- B 22
- C 11
- D 66

**Answer: A**

**Explanation:**

Number of ways the committee be selected with atleast one engineer and one manager,

$$= {}^3C_1 {}^3C_1 {}^3C_1 + {}^3C_1 {}^3C_2 + {}^3C_2 {}^3C_1 + {}^3C_2 {}^1C_1 + {}^3C_2 {}^1C_1$$

$$= 9 + 9 + 9 + 3 + 3 = 33$$

Hence, option A is the correct answer.

**Question 68**

**A cricket team of 11 players is to be formed from a pool of 16 players that includes 4 bowlers and 2 wicket-keepers. In how many different ways can a team be formed so that the team has at least 3 bowlers and wicket keeper?**

- A 2472
- B 2274
- C 2427
- D 1236

**Answer: A**

**Explanation:**

Number of different ways so that the team has at least 3 bowlers and wicket keeper,

$$= {}^4C_3 {}^2C_1 {}^{10}C_7 + {}^4C_4 {}^2C_1 {}^{10}C_6 + {}^4C_3 {}^2C_2 {}^{10}C_6 + {}^4C_4 {}^2C_2 {}^{10}C_5$$

$$= 4 \times 2 \times 120 + 1 \times 2 \times 210 + 4 \times 1 \times 210 + 1 \times 1 \times 252$$

$$= 960 + 420 + 840 + 252$$

$$= 2472$$

Hence, option A is the correct answer.

## Daily Free Topic Test

**Question 69**

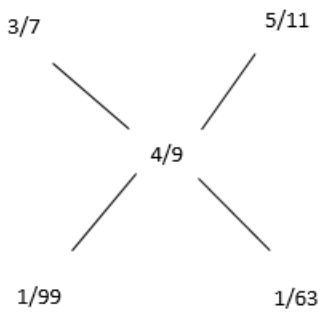
**Vijay purchased two different kinds of alcohol. In the first mixture the ratio of alcohol to water is 3 : 4 and in the second mixture it is 5 : 6. If he mixes the two given mixtures and makes a third mixture of 18 litres in which the ratio of alcohol to water is 4 : 5, the quantity of the first mixture (whose ratio is 3 : 4) that is required to make 18 litres of the third kind of mixture is**

- A 6
- B 7
- C 8
- D 9

**Answer: B**

**Explanation:**

By using allegation method,



Ratio of first mixture to second mixture mixed in third mixture,

$$\Rightarrow \frac{1}{99} : \frac{1}{63}$$

$$\Rightarrow \frac{1}{11} : \frac{1}{7}$$

$$\Rightarrow 7 : 11$$

Required quantity,

$$\Rightarrow \frac{7}{18} \times 18 = 7$$

Hence, option B is the correct answer.

**Question 70**

The average marks of the students in four sections A, B, C and D of a school is 60%. The average marks of the students of A, B, C and D individually are 45%, 50%, 72% and 80%, respectively. If the average marks of the students of sections A and B together is 48% and that of the students of B and C together is 60%, what is the ratio of the number of students in sections A and D?

- A 2 : 3
- B 4 : 3
- C 5 : 3
- D 3 : 5

**Answer: B**

**Explanation:**

Let  $a, b, c, d$  be the number of students in A, B, C and D respectively

Given, average marks of the students in section A, B, C and D of the school = 60

$$\text{Then } \frac{45a+50b+72c+80d}{a+b+c+d} = 60\%$$

$$= 45a + 50b + 72c + 80d = 60a + 60b + 60c + 60d$$

$$= 12c + 20d = 15a + 10b \dots\dots(1)$$

Average marks of the students of sections A and B together is 48%,

$$= \frac{45a+50b}{a+b} = 48\%$$

$$= 45a + 50b = 48a + 48b$$

$$= 3a = 2b \text{ (or) } 15a = 10b \dots\dots(2)$$

Average marks of the students of sections B and C together is 60%

$$= \frac{72c+80d}{c+d} = 60\%$$

$$= 72c + 80d = 60c + 60d$$

$$= 12c = 20d \dots\dots(3)$$

Substitute equations (2) and (3) in equation (1)

$$\Rightarrow 20d + 20d = 15a + 15a$$

$$\Rightarrow 40d = 30a$$

$$\Rightarrow a : d = 4 : 3$$

Hence, option B is the correct answer.

#### Question 71

Two casks of 48 litres and 42 litres are filled with mixtures of milk and water, the proportions in the two casks being respectively, 13 : 7 and 18 : 17. If the contents of the two casks be mixed and 20 litres of water be added to the whole, what will be the proportion of milk and water in the resulting mixture?

A 5 : 12

B 7 : 13

C 12 : 13

D 8 : 15

Answer: C

#### Explanation:

Quantity of milk in the mixture,

$$\begin{aligned} &= \frac{13}{20} \times 48 + \frac{18}{35} \times 42 \\ &= \frac{156}{5} + \frac{108}{5} = \frac{264}{5} \text{ L} \end{aligned}$$

Quantity of water in the mixture,

$$\begin{aligned} &= \frac{7}{20} \times 48 + \frac{17}{35} \times 42 \\ &= \frac{84}{5} + \frac{102}{5} = \frac{186}{5} \text{ L} \end{aligned}$$

20L of mixture is added to the mixture,

$$\begin{aligned} &= \frac{186}{5} + 20 = \frac{186+100}{5} \\ &= \frac{286}{5} \text{ L} \end{aligned}$$

$$\text{Required ratio} = \frac{264}{5} : \frac{286}{5}$$

$$= 12 : 13$$

Hence, option C is the correct answer.

## MAT Free Solved Previous Papers

#### Question 72

Two companies A and B quote for a tender. On the tender opening day, A realises that the two quotes are in the ratio 7 : 4 and hence decreases its price during negotiations to make it Rs.1 lakh lower than B's quoted price. B then realises that the final quotes of the two were in the ratio 3 : 4. By how much did A decrease its price in order to win the bid?

A Rs.7 Lakhs

B Rs.4 lakhs

C Rs.9 lakhs

D None of these

Answer: B

**Explanation:**

Let the quotes of A and B be  $7x$  and  $4x$

According to the question,

$$= \frac{4x-1}{4x} = \frac{3}{4}$$

$$= 4x - 1 = 3x \text{ (or) } x = 1 \text{ Lakh}$$

Amount decreased by A in price to win the bid is given by,

$$= 7x - (4x - 1)$$

$$= 3x + 1 = 4 \text{ Lakh}$$

Hence, option B is the correct answer.

**Question 73**

To fill a certain tank, pipes A, B and C take 20 minutes, 15 minutes and 12 minutes respectively. If the three pipes are opened every alternate minute, how long will it take to fill the tank?

- A 5 minutes
- B 10 minutes
- C 12 minutes
- D 15 minutes

**Answer:** D

**Explanation:**

$$\text{Part filled by 3 pipes in 3 minutes} = \frac{1}{20} + \frac{1}{15} + \frac{1}{12} = \frac{3+4+5}{60} = \frac{1}{5}$$

1/5th of the tank is filled in 3 minutes then whole tank is filled in  $5 \times 3 = 15$ min

Hence, option D is the correct answer.

**Question 74**

A bath can be filled by the cold water and hot water pipes in 10 minutes and 15 minutes respectively. A person leaves the bathroom after turning on both pipes simultaneously and returns at the moment when the bath should be full. Finding, however, that the waste pipe has been open, he then closes it. In exactly four minutes more the bath is full. In how much time would the waste pipe empty the full bath, if it alone is opened?

- A 9 minutes
- B 10 minutes
- C 12 minutes
- D None of these

**Answer:** D

**Explanation:**

Time taken by the hot and cold water pipes to fill the bath,

$$= \frac{10 \times 15}{10+15} = 6 \text{ min}$$

Total time taken to fill the bath including the empty pipe is also open =  $(6 + 4) = 10$  min

Let 'x' be the time taken by empty pipe to empty the bath.

$$\therefore \frac{1}{10} + \frac{1}{15} + \frac{1}{x} = \frac{1}{10}$$

$$\Rightarrow \frac{1}{x} = \frac{1}{15}$$

$$\Rightarrow x = 15 \text{ min}$$

Hence, option D is the correct answer.

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### Question 75

A, B and C are three pipes attached to a cistern. A and B can fill it in 20 minutes and 30 minutes respectively, while C can empty it in 15 minutes. If A, B and C be kept open successively for 1 minute each, how soon will the cistern be filled?

A 180 minutes

B 60 minutes

C 157 minutes

D 155 minutes

**Answer: A**

### Explanation:

Part filled by A, B and emptied by C in one minute =  $\frac{1}{20}$ ,  $\frac{1}{30}$  and  $\frac{1}{15}$

Part filled by three pipes in 3 minutes =  $\frac{1}{20} + \frac{1}{30} - \frac{1}{15}$

$$\Rightarrow \frac{3+2-4}{60} = \frac{1}{60}$$

Cistern can be filled in  $60 \times 3 = 180$  minutes.

Hence, option A is the correct answer.

### Question 76

Two taps can separately fill a cistern in 10 minutes and 15 minutes respectively. If these two pipes and a waste pipe are kept open simultaneously, the cistern gets filled in 18 minutes. The waste pipe can empty the full cistern in

A 7 minutes

B 13 minutes

C 23 minutes

D 9 minutes

**Answer: D**

### Explanation:

Let, the time taken by waste pipe to empty the cistern = 'x'

Part filled by two pipes in 1 minute is  $\frac{1}{10}$  and  $\frac{1}{15}$  respectively and the cistern gets filled in 18 minutes (given).

Net part filled in 1 hour is given by,

$$\frac{1}{10} + \frac{1}{15} - \frac{1}{x} = \frac{1}{18}$$

$$\frac{1}{10} + \frac{1}{15} - \frac{1}{18} = \frac{1}{x}$$

$$\frac{9+6-5}{90} = \frac{1}{x}$$

$$\frac{10}{90} = \frac{1}{x} \text{ or } x = 9 \text{ minutes}$$

Hence, option D is the correct answer.

### Question 77

Raghu travelled 1200 km by air which formed  $\frac{2}{5}$  of his trip. One - third of the whole trip he travelled by car and the rest of the journey he did by train. The distance travelled by train is

- A 1600 km
- B 800 km
- C 1800 km
- D 480 km

**Answer:** B

#### Explanation:

Let, the whole distance travelled be 'x',

Raghu travelled 1200 km by air which formed  $\frac{2}{5}$  of his trip,

$$\frac{2}{5} \text{ of } x = 1200$$

$$x = 3000 \text{ km}$$

One - third of the whole trip he travelled by car,

$$\frac{1}{3} \times 3000 = 1000 \text{ km}$$

The rest of the journey he did by train,

$$\therefore \text{The distance travelled by train} = 3000 - (1200 + 1000)$$

$$\Rightarrow 800 \text{ km}$$

Hence, option B is the correct answer.

## Free Gk Tests

### Question 78

A man has to cover a distance of 6 km in 45 minutes. If he covers one-half of the distance in  $\frac{2}{3}$  time, what should be his speed to cover the remaining distance in the remaining time?

- A 12 km/h
- B 16 km/h
- C 3 km/h
- D 8 km/h

**Answer:** A

#### Explanation:

$$\text{Remaining Distance to be covered} = 6 - \frac{1}{2} \times 6 = 3 \text{ km}$$

$$\text{Remaining time} = 45 - \frac{2}{3} \times 45 = 15 \text{ minutes (or) } \frac{1}{4} \text{ hour}$$

Required speed to cover the remaining distance in the remaining time,

$$= \left(\frac{3}{\frac{1}{4}}\right) = 12 \text{ km/h}$$

Hence, option A is the correct answer.

**Question 79**

A man starts cycling from A to B and, at the same time, another man starts cycling from B to A along the same path. They completed their journeys in  $1\frac{2}{3}$  and  $2\frac{2}{5}$  hours, respectively. At what speed has the second man cycled if the first cycles at 16 km/h?

- A  $16\frac{1}{2}$  km/h
- B  $18\frac{1}{2}$  km/h
- C  $11\frac{1}{9}$  km/h
- D  $13\frac{1}{3}$  km/h

**Answer:** C

**Explanation:**

Distance travelled by A and B is same.

Time taken by A to complete the journey =  $\frac{5}{3}$  h

Speed at which A travelled = 16 km/h

Distance travelled by A =  $\frac{5}{3} \times 16 = \frac{80}{3}$  km

Now, speed of the second man is given by,

$$S = \frac{80/3}{12/5}$$

$$S = \frac{80 \times 5}{3 \times 12}$$

$$S = \frac{100}{9} = 11\frac{1}{9} \text{ km/h}$$

Hence, option C is the correct answer.

**Question 80**

Two men A and B start walking from a place 'X' at  $4\frac{1}{2}$  km/h and  $5\frac{3}{4}$  km/h respectively. How many km apart will they be at the end of  $3\frac{1}{2}$  hours if they are walking in the same direction?

- A  $4\frac{1}{2}$  km
- B  $5\frac{3}{4}$  km
- C  $4\frac{3}{8}$  km
- D  $35\frac{7}{8}$  km

**Answer:** C

**Explanation:**

Relative speed between A and B is given by,

$$\frac{23}{4} - \frac{9}{2} = \frac{23-18}{4} = \frac{5}{4} \text{ km/h}$$

Total number of km's away is given by,

$$D = \frac{5}{4} \times \frac{7}{2}$$

$$D = \frac{35}{8} \text{ (or) } 4\frac{3}{8} \text{ km}$$

Hence, option C is the correct answer.



# Data Analysis & Sufficiency

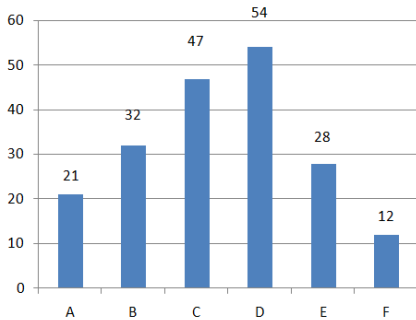
## Instructions

Study the graph to answer these questions.

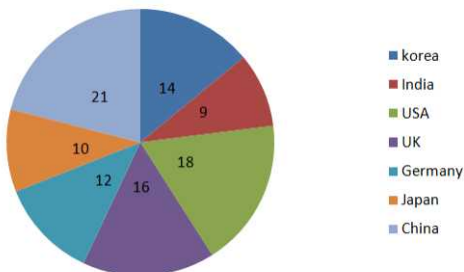
The bar graph below shows the sales of six different cell phone manufacturers in 2011 (in '000units).

The Adjoining pie chart shows the breakeup of brand C alone in the same year for those countries where it is sold.

2011 Global Sales ('000s )



Brand 'C' Country-wise sales



## Question 81

What is the differences in volume of sales of brand C in UK and India?

- A 2892
- B 3290
- C 3112
- D 2918

Answer: B

### Explanation:

Total sales of brand C in 2011 = 47,000

Difference between volume of sales of brand C in UK and India is given by,

$$\Rightarrow (16\% \text{ of } 47,000) - (9\% \text{ of } 47,000)$$

$$\Rightarrow 7\% \text{ of } 47,000 = 0.07 \times 47,000 = 3290.$$

Hence, option B is the correct answer.

## MAT Free Solved Previous Papers

## Question 82

By what percentage should global sales of 'C' phone increase, so that its sales volume in korea becomes 7000 units, while the volume of sales to all other countries remains the same?

- A 1.1

- B 0.9
- C 2.3
- D 0.7

**Answer: B**

**Explanation:**

Volume of sales of brand C in Korea = 14% of 47,000 = 6580

To make it 7000 we need to add 420 to it.

Percentage increase in sales of C phone =  $\frac{420}{47000} \times 100 = 0.9(\text{approx})$

Hence, option B is the correct answer.

**Question 83**

**If in 2012 the global sales of brand C increases by 12%, while its sale in USA increases by 34% and in China by 22%, what is the approximate sales increase in the rest of the countries taken together?**

- A 1.83%
- B 2.25%
- C 2%
- D 1.5%

**Answer: C**

**Explanation:**

In 2011, global sales of brand C = 47000

In 2012, global sales of brand C = 112% of 47000 = 52640

Total sales in USA in 2011 = 18% of 47000 = 8460

Total sales in USA in 2012 = 134% of 8460 = 11,336.4

Total sales of China in 2011 = 21% of 47000 = 9870

Total sales of China in 2012 = 122% of 9870 = 12041.4

Total sales in rest of the country in 2011,

$$= 47000 - (8460 + 9870)$$

$$= 47000 - 18330 = 28670$$

Total sales in rest of the country in 2012,

$$= 52640 - (11336.4 + 12041.4)$$

$$= 52640 - 23377.8 = 29262.2$$

Percentage increase in the rest of the countries,

$$= \frac{29262.2 - 28670}{28670} \times 100$$

$$= \frac{592.2}{28670} \times 100$$

$$= 2\% (\text{approx})$$

Hence, option C is the correct answer.

**Question 84**

**If A alone registers growth in sales in 2012 and draws level with the volume of B, what would be their combined share of the global sales volume?**

- A 29.9%
- B 31.2%
- C 27%
- D 33%

**Answer: B**

**Explanation:**

Given, A alone grows in 2012 and draws level with B in global sales. So, sales of A becomes 32.

$$\text{Combined share of A and B in global share} = \frac{32+32}{32+32+47+54+28+12} = \frac{64}{205} = 31.2\%$$

Hence, option B is the correct answer.

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**Question 85**

**If the sale of phones in 2012 registers a uniform 33% growth across all brand and all countries, what would be the combined sales volume of phones in india, Japan and Korea taken together, in that year?**

- A 87224
- B 82136
- C 85124.6
- D 78958

**Answer: C**

**Explanation:**

Given that there is a uniform 33% growth across all brands and countries.

$$\begin{aligned} \text{Global sales of all brands in 2012} &= 133\% \text{ of } (21 + 32 + 47 + 54 + 28 + 12) \\ &= 133\% \text{ of } 194 \\ &= 258.02 \times 1000 \text{ units} \end{aligned}$$

combined sales volume of phones in india, Japan and Korea taken together in that year,

$$\begin{aligned} &= (9 + 10 + 14)\% \text{ of } 258.02 \times 1000 \\ &= 33\% \text{ of } 258.02 \\ &= 85146.6 \approx 85124.6 \end{aligned}$$

Hence, option C is the correct answer.

**Instructions**

Study the table below to answer these questions

Country Item	A	B	C	D	E	F
Iron ore	18	12	25	11	32	5
Coal	12	38	22	6	29	42
Silver	14	18	26	3	48	23
Copper	23	12	20	2	2	16
Gold	2	4	8	1	3	10

The Table shows the quantities of minerals exported from India to six different countries A,B,C,D,E and F(in '000 tonnes) in the year 2010.

**Question 86**

If the second-largest importing country increases its off-take of all the minerals, taken together, from india and is at par with the largest importer, its share of the total exports of minerals from india would be?

- A 26%
- B 19%
- C 23%
- D 24%

**Answer: C**

**Explanation:**

Largest importing country is E whose imports =  $(32 + 29 + 48 + 2 + 3) = 114$  units

Second largest importing country is C whose imports =  $(25 + 22 + 26 + 20 + 8) = 101$  units

Second largest importing country is at par with largest importing country. Its share of the total exports is given by,

$$= \frac{114}{69+84+114+23+114+96} \times 100$$

$$= \frac{114}{500} \times 100$$

$$= 22.8 \approx 23\%$$

Hence, option C is the correct answer.

**Question 87**

If India were to ban the export of gold altogether, by what approximate percentage should the export of the rest of the minerals increase so that the total quantity of minerals exported remains the same?

- A 18
- B 3
- C 32
- D 6

**Answer: D**

**Explanation:**

Total quantity of gold exported by India to all six countries = 28

Total quantity of other minerals except gold exported by India to all six countries =  $103+149+132+75 = 459$

Here, 28 units of other minerals should be added instead of gold to the present 459 units to keep the total exported minerals same.

∴ Percentage increase in the export of rest of the minerals is given by,

$$\frac{28}{459} \times 100 = 6 \text{ (approx)}$$

Hence, option D is the correct answer.

## Free Gk Tests

### Question 88

Eighteen per cent of country E's total requirement of iron ore is being met by imports from India. Next year its total requirement of iron ore is expected to fall by 22% and only 12% of the revised requirement will be imported from India. Assuming all other exports to country E by India remain at the same level, what would be its total percentage drop in quantity exports to E?

A 28.4

B 11.2

C 13.4

D 18.2

Answer: C

#### Explanation:

From the given question,

18% of E's Iron ore requirement = 32000 units

E's total Iron ore requirement =  $32000 \times (100/18) = 177777.78$

E's requirement of Iron ore in 2011 = 78% of 177777.78 = 138666.6684

Only 12% of the revised requirement will be imported from India.

∴ Import of iron ore from India in 2011 = 16640

Total imports of E from India in 2010 =  $(32 + 29 + 48 + 2 + 3) = 114 \times 1000$  units

Total imports of E from India in 2011 =  $16640 + (29 + 48 + 2 + 3) \times 1000 = 98640$

Required drop in percentage is given by,

$$= \frac{114000 - 98640}{114000} \times 100$$

$$= \frac{15360}{114000} \times 100$$

$$= 13.4\%$$

Hence, option C is the correct answer.

### Question 89

If international demand for coal from India rises by 12%, that of Iron ore by 8% and copper by 15%, by how much percent will total export from India rise, assuming export of Gold and silver remain at the same level?

A 6.8

B 11.2

C 8.1

D 7.6

Answer: D

#### Explanation:

International demand for coal from India rises by 12%,

$$\Rightarrow 112\% \text{ of } 149 = 166.88$$

For Iron ore,

$$\Rightarrow 108\% \text{ of } 103 = 111.54$$

For Copper,

$$\Rightarrow 115\% \text{ of } 75 = 86.25$$

Total percentage rise in exports from India is given by,

$$= \frac{(111.54 + 166.88 + 132 + 86.25 + 28) - 487}{487} \times 100$$

$$= \frac{524.37 - 487}{487} \times 100$$

$$= \frac{37.37}{487} \times 100$$

$$= 7.6\%$$

Hence, option D is the correct answer.

#### Question 90

If due to rise in prices, volume of exports of Gold decreases by 12% while that of Silver decreases by 14%, but due to global rise in car production levels, however, demand for Iron ore increases by 6%, what is the net effect on volume of exports from India

- A Increase of 3.2%
- B Decrease of 2.3%
- C Increase of 2.3%
- D Decrease of 3.2%

**Answer: D**

#### Explanation:

Volume of gold decreases by 12%,

$$= 88\% \text{ of } 28 = 24.64$$

Volume of silver decreases by 14%,

$$= 86\% \text{ of } 132 = 113.52$$

Volume of Iron ore increases by 6%,

$$= 106\% \text{ of } 103 = 109.18$$

$$\text{New volume} = 109.18 + 149 + 113.52 + 75 + 24.64 = 471.34$$

Percentage decrease is given by,

$$= \frac{487 - 471.34}{487} \times 100$$

$$= \frac{15.66}{487} \times 100$$

$$= 3.2\%$$

Hence, option D is the correct answer.

### Daily Free Topic Test

#### Instructions

Each of these has a question followed by two statements numbered I and II.

### Question 91

If a certain village is losing 12% of its water supply each day because of a burst water pipe, then what is the loss in rupee per day?

- I. The daily water supply to the village is 700m gallon.
- II. The cost to the village for every 24000 gallons of water lost is ₹25.

- A If statement I alone is sufficient but statement II along is not sufficient to answer the question.
- B If statement II alone is sufficient but statement I along is not sufficient to answer the question.
- C If both statements I and II together are required to answer the question but neither statement alone is sufficient
- D If statements I and II together are not sufficient to answer the question

**Answer:** C

#### Explanation:

(i) The daily water supply to the village = 700 million gallons

From this 12% is lost i.e 84 million gallons

(ii) Cost for every 24,000 gallons of water lost = ₹25 and for 84 millions it is  $25 \times 3500 = 87500$  rs

Using (i) and (ii) we can find the loss in rupee per day.

Hence, option C is the correct answer.

### Question 92

Dipesh had a lawyer's appointment on a certain day. Was the appointment on a Tuesday?

- I. Exactly 60 h before the appointment, it was sunday
- II. The appointment is between 1:00pm to 9:00pm.

- A if statement I alone is sufficient but statement II along is not sufficient to answer the question.
- B if statement II alone is sufficient but statement I along is not sufficient to answer the question.
- C if both statements I and II together are required to answer the question but neither statement alone is sufficient
- D if statements I and II together are not sufficient to answer the question

**Answer:** C

#### Explanation:

From (i) it is not certain that the appointment was on Tuesday. Because if the appointment was at 6 am then exactly after 60 h it is Tuesday.

But if the appointment was at 6 pm then exactly after 60 h it is not Tuesday. We cannot solve the question using only (i)

From (ii), it is not certain that it is Tuesday as only time is given.

But from (i) and (ii) we can say that the appointment was on Tuesday if we take any time between 1pm and 9pm.

Question can be solved using both the statements.

Hence, option C is the correct answer.

### Question 93

What is the weighted averaged of marks obtained by Ashokan?

- I. Math, Science and English have weights 5, 4 and 3 respectively.
- II. Simply arithmetic mean of math and science is 140, which is twice his average of science and English

- A If statement I alone is sufficient but statement II along is not sufficient to answer the question.
- B If statement II alone is sufficient but statement I along is not sufficient to answer the question.

- C If both statements I and II together are required to answer the question but neither statement alone is sufficient
- D If statements I and II together are not sufficient to answer the question

**Answer: D**

**Explanation:**

From (ii),

$$\Rightarrow (M + S)/2 = 140$$

$$\Rightarrow M + S = 280 \text{ and}$$

$$\Rightarrow S + E = 140$$

We cannot find values of his marks obtained from the above two equations and from (i) only weights of the subjects are given. To find the weighted average we need both weights and values of the subjects. So from (i) and (ii) we cannot solve the question. Hence, option D is the correct answer.

## MAT Free Solved Previous Papers

### Question 94

Total amount of ₹38500 was distributed among Anuj, Sonam and Depak. How much does each get?

I. Anuj gets  $\frac{2}{9}$  of what the other two together get.

II. Sonam gets  $\frac{3}{11}$  of what the other two together get.

- A If statement I alone is sufficient but statement II alone is not sufficient to answer the question.
- B If statement II alone is sufficient but statement I alone is not sufficient to answer the question.
- C If both statements I and II together are required to answer the question but neither statement alone is sufficient
- D If statements I and II together are not sufficient to answer the question

**Answer: C**

**Explanation:**

From the given question, Anuj(A) + Sonam(S) + Depak(D) = 38,500

$$\text{From (i), } A = \frac{2}{9}(S + D)$$

$$A = \frac{2}{9}(38,500 - A)$$

From the above equation we can find the amount received by Anuj

$$\text{From (ii), } S = \frac{3}{11}(A + D)$$

$$S = \frac{3}{11}(38,500 - S)$$

From the above equation we can find the amount received by Sonam

Now from the given question we can find the amount received by Depak also. So both the statements are required to answer the question.

Hence, option C is the correct answer.

### Question 95

Nitu and Arun start walking towards each other simultaneously. What is the distance between them when they start?

I. 30 min after crossing each other they were 1200 m apart.

II. After crossing each other, Nitu reaches the starting point of Arun in twice as much as Arun takes to reach the starting point of Nitu.



- A If statement I alone is sufficient but statement II alone is not sufficient to answer the question.
- B If statement II alone is sufficient but statement I alone is not sufficient to answer the question.
- C If both statements I and II together are required to answer the question but neither statement alone is sufficient
- D If statements I and II together are not sufficient to answer the question

**Answer:** D

**Explanation:**

Even using the both statements we cannot find the distance between them.

Hence, option D is the correct answer.

**Instructions**

Two quantities A and B are given in each of the following questions.

**Question 96**

- A. The number of ways you can divide 6 different candies to 4 different people.
- B. The number of ways you can divide 7 different candies to 3 different people.

- A If quantity A is greater than quantity B
- B If quantity B is greater than quantity A
- C If quantities A and B are equal
- D If comparison cannot be made.

**Answer:** B

**Explanation:**

The number of ways you can divide 6 different candies to 4 different people is given by,

$$= {}^6C_4 \text{ or } {}^6C_2 = \frac{6 \times 5}{1 \times 2} = 15$$

The number of ways you can divide 7 different candies to 3 different people is given by,

$$= {}^7C_3 = \frac{7 \times 6 \times 5}{1 \times 2 \times 3} = 35$$

Quantity B is greater than quantity A.

Hence, option B is the correct answer.

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**Question 97**

Arun and Rakesh bought the same brand of car. Arun got 10% discount from the dealer after which 7% sales tax was added. For Rakesh 7% tax was added and only then a 10% discount was given.

- A. The amount Arun paid for the car
- B. The amount Rakesh paid for the car

- A If quantity A is greater than quantity B
- B If quantity B is greater than quantity A
- C If quantities A and B are equal
- D If comparison cannot be made.

**Answer:** C

**Explanation:**

Let the price of the car which Arun and Rakesh bought be 'x'

A) Arun got 10% discount from the dealer after which 7% sales tax was added,

Effective price of the car = 90 % of 93% of x

B) For Rakesh 7% tax was added and only then a 10% discount was given,

Effective price of the car = 93% of 90% of x

Both the quantities are equal.

Hence, option C is the correct answer.

**Question 98**

**The Average Height in the class didn't change after Shaan and John left and Aarti and Geetha came**

**A. The height of Shaan**

**B. the height of Aarti**

**A** If quantity A is greater than quantity B

**B** If quantity B is greater than quantity A

**C** If quantities A and B are equal

**D** If comparison cannot be made.

**Answer: D**

**Explanation:**

From the given question,

Total height of Shaan and John = Total height of Aarti and Geetha.

Separate heights cannot be determined.

Hence, option D is the correct answer.

**Question 99**

**Travis received an allowance. With a fifth of the money, he bought a ticket to a movie and with a quarter of what is left he bought a slice of pizza?**

**A. The price of movie ticket**

**B. The price of slice of pizza**

**A** If quantity A is greater than quantity B

**B** If quantity B is greater than quantity A

**C** If quantities A and B are equal

**D** If comparison cannot be made.

**Answer: C**

**Explanation:**

Let the amount received by Travis as allowance = 100

Amount spent on movie ticket =  $\frac{1}{5} \times 100 = 20$

Remaining amount =  $100x - 20x = 80x$

Amount spent on a slice of pizza =  $\frac{1}{4} \times 80 = 20$

Amounts spent on movie ticket and slice of pizza is same

Hence, option C is the correct answer.

## Free Gk Tests

### Question 100

Mukesh and Vijay each have some stamps while Sharon has none. They decided to give Sharon half of the number that Mukesh has and half of the number that Vijay has

- A. The average number of stamps that Mukesh and Vijay have before giving Sharon any stamps.
- B. The number of stamps that Sharon gets from Mukesh and Vijay

- A If quantity A is greater than quantity B
- B If quantity B is greater than quantity A
- C If quantities A and B are equal
- D If comparison cannot be made.

**Answer:** C

#### Explanation:

Let the number of stamps with Mukesh and Vijay be 100 each

If they give half of the stamps to Sharon then,

Mukesh will have 50 stamps, Vijay will have 50 stamps and Sharon will have 100 stamps

A) The average number of stamps that Mukesh and Vijay have before giving Sharon any stamps =  $(100 + 100)/2 = 100$

B) The number of stamps that Sharon gets from Mukesh and Vijay =  $(50 + 50) = 100$

Both the quantities are equal.

Hence, option C is the correct answer.

#### Instructions

### Question 101

What is the ratio of the number of cars sold of model A in 2010 to the number of cars sold of model C in 2011?

- A 1.3 : 2
- B 0.58 : 1
- C 0.62 : 1
- D 1 : 1.27

**Answer:** C

#### Explanation:

The ratio of the number of cars sold of model A in 2010 to the number of cars sold of model C in 2011 is given by,

= 21% of 2222 : 26% of 2884

=  $3 \times 1111 : 26 \times 206$

= 0.62 : 1

Hence, option C is the correct answer.

### Question 102

By how much percentage is the increase in sale from 2010 to 2011 of model D more/less than that of model C?

- A 69% less

- B 60% more
- C 59% less
- D None of these

**Answer: C**

**Explanation:**

Increase in sales of model D from 2010 to 2011,

$$= 16\% \text{ of } 2884 - 16\% \text{ of } 2222$$

$$= 16\% \text{ of } 662$$

$$= 105.92$$

Increase in sales of model C from 2010 to 2011,

$$= 26\% \text{ of } 2884 - 22\% \text{ of } 2222$$

$$= 749.84 - 488.84$$

$$= 261$$

Increase in sales of model C is more than sales of model D from 2010 to 2011.

$$\text{Required percentage} = \frac{261 - 105.92}{261} \times 100 = \frac{155.08}{261} \times 100 = 59\%$$

Hence, option C is the correct answer.

## Daily Free Topic Test

**Question 103**

How many models have registered higher percentage increase in sales individually, as compared to the percentage increase in total sales?

- A 2
- B 3
- C 1
- D None of these

**Answer: B**

**Explanation:**

Total percentage increase from 2010 to 2011,

$$= \frac{2884 - 2222}{2222} \times 100 = 29.79\%$$

Percentage increase in sales of A,

$$= \frac{0.27 \times 2884 - 0.21 \times 2222}{0.21 \times 2222} \times 100 = 66.87\%$$

Percentage of increase in sales of B,

$$= \frac{0.25 \times 2884 - 0.25 \times 2222}{0.25 \times 2222} \times 100 = 29.79\%$$

Percentage of increase in sales of C,

$$= \frac{0.26 \times 2884 - 0.22 \times 2222}{0.22 \times 2222} \times 100 = 53.33\%$$

Percentage of increase in sales of D,

$$= \frac{0.16 \times 2884 - 0.16 \times 2222}{0.16 \times 2222} \times 100 = 29.79\%$$

Percentage of increase in sales of E,

$$= \frac{0.08 \times 2884 - 0.12 \times 2222}{0.12 \times 2222} \times 100 = \text{Some negative value}$$

Percentage of increase in sales of F,

$$= \frac{0.06 \times 2884 - 0.04 \times 2222}{0.04 \times 2222} \times 100 = 94.68\%$$

Three models i.e A, C, F have registered higher percentage increase in sales individually.

Hence, option B is the correct answer.

#### Question 104

If the declining trend in model B sales is projected to continue in 2012 as well, what would be the approximate model B increase in total sales?

- A 459
- B 424
- C 430
- D 434

Answer: D

#### Question 105

What was the ratio of the combined sales of the two highest selling models to that of the two lowest selling models in 2011?

- A 2:1
- B 3:2
- C 5:1
- D 4:1

Answer: D

#### Explanation:

Two highest selling models in 2011 = (27% + 26%) of 2884

Two lowest selling models in 2010 = (8% + 6%) of 2884

Their ratio = (27% + 26%) of 2884 : (8% + 6%) of 2884

= 53% of 2884 : 14% of 2884

= 53 : 14

= 4 : 1 (approx)

Hence, option D is the correct answer.

## MAT Free Solved Previous Papers

#### Instructions

Study the information below and answer these questions.

The adult population of a town in 1990 was 20440 people of which 53% were females while 60% were illiterates. Of these, the number above the age of 50 in that year was 17%. In the 2000 Census, it was found that adult population has reached 30760, 48% of them being females. Of the total adult population in 2000, 72% were below the age of 50 and total illiterates were 7000. Assume uniform pattern of age distribution amongst males and females.

#### Question 106

What is the ratio of adult females below the age of 50 in the year 1990 and 2000?

- A 2.50 : 2
- B 2 : 2.50
- C 1 : 1.18
- D 1.18 : 1

Answer: C

Explanation:

	Adults	Females	Males	Literates	Illiterates	Age above 50	Age below 50
1990	20440	10833.2	9606.8	8176	12264	3474.8	16965.2
2000	30760	14764.8	15995.2	23760	7000	8612.8	22147.2

Adult females below the age of 50 in the year 1990,

$$53\% \text{ of } 16965.2 = 8991.556 = 8992 \text{ (approx)}$$

Adult females below the age of 50 in the year 2000,

$$48\% \text{ of } 22147.2 = 10630.656 = 10631 \text{ (approx)}$$

$$\text{Ratio} = 8992 : 10631$$

$$= 1 : 1.18$$

Hence, option C is the correct answer.

Question 107

If every adult female above the age of 50 was given a special annual allowance of 24000 in 1990 which was increased to 30000 by the year 2000, by what percentage has the quantum of this annual allowance increased/decreased from 1990 to 2000?

- A 108
- B 280
- C 208
- D 180

Answer: D

Explanation:

	Adults	Females	Males	Literates	Illiterates	Age above 50	Age below 50
1990	20440	10833.2	9606.8	8176	12264	3474.8	16965.2
2000	30760	14764.8	15995.2	23760	7000	8612.8	22147.2

Adult females above the age of 50 in 1990 = 53% of 3474.8 = 1841.644

$$\text{Total allowance given} = 1842 \times 24000 = 4,42,08,000$$

Adult females above the age of 50 in 2000 = 48% of 8612.8 = 4134

$$\text{Total allowance given} = 4134 \times 30000 = 12,40,20,000$$

∴ Percentage increase in annual allowance from 1990 to 2000,

$$= \frac{12,40,20,000 - 4,42,08,000}{4,42,08,000} \times 100$$

$$= \frac{79812}{44208} \times 100$$

$$= 180\%$$

Hence, option D is the correct answer.

### Question 108

What is the ratio of total adult illiterates in 1990 to total adult females below 50 in 2000?

- A 1 : 0.87
- B 1.15 : 1
- C 0.87 : 1
- D 1 : 1.15

Answer: B

Explanation:

	Adults	Females	Males	Literates	Illiterates	Age above 50	Age below 50
1990	20440	10833.2	9606.8	8176	12264	3474.8	16965.2
2000	30760	14764.8	15995.2	23760	7000	8612.8	22147.2

Total adult illiterates in 1990 = 12264

Total adult females below 50 in 2000 = 48% of 22147.2 = 10631

Ratio = 12264 : 10631

= 1.15 : 1

Hence, option B is the correct answer.

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### Question 109

What has been the percentage increase in adult literates from 1990 to 2000?

- A 127
- B 191
- C 132
- D 275

Answer: B

Explanation:

	Adults	Females	Males	Literates	Illiterates	Age above 50	Age below 50
1990	20440	10833.2	9606.8	8176	12264	3474.8	16965.2
2000	30760	14764.8	15995.2	23760	7000	8612.8	22147.2

Total number of adult literates in 1990 = 8176

Total number of adult literates in 2000 = 23760

Percentage increase =  $\frac{23760 - 8176}{8176} \times 100$

=  $\frac{1558400}{8176} = 190.60 = 191\%$  (approx)

Hence, option B is the correct answer.



**Question 110**

If expense incurred on education (per literate adult) in 1990 was 1200 and the same had increased by 25% in 2000. What is the percentage increase in expenditure under this head?

- A 236
- B 263
- C 250
- D 178

**Answer: B**

**Explanation:**

	Adults	Females	Males	Literates	Illiterates	Age above 50	Age below 50
1990	20440	10833.2	9606.8	8176	12264	3474.8	16965.2
2000	30760	14764.8	15995.2	23760	7000	8612.8	22147.2

Total adult literates in 1990 = 8176

Total expense on education in 1990 = 1200 x 8176 = 9811200

Total adult literates in 2000 = 23760

Total expense on education in 2000 = 125% of 1200 x 23760 = 35640000

$$\text{Percentage increase} = \frac{35640000 - 9811200}{9811200} \times 100$$

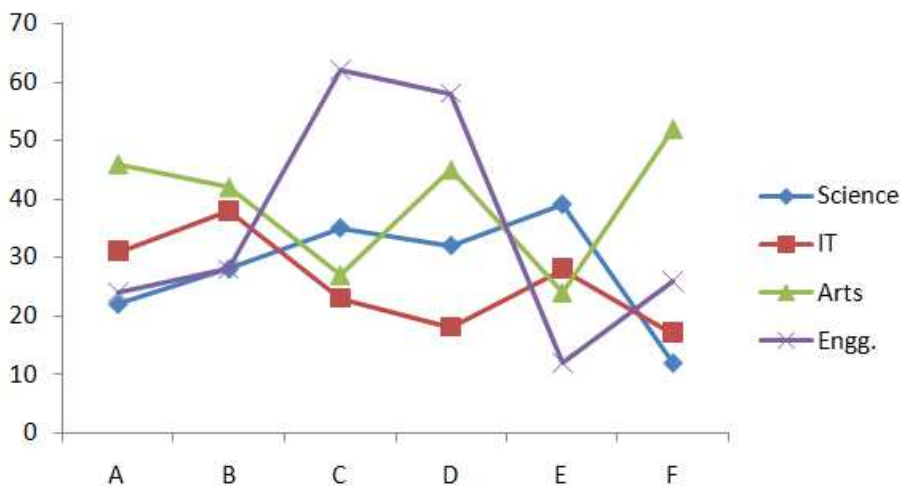
$$= \frac{25828800}{98112} = 263\%$$

Hence, option B is the correct answer.

**Instructions**

Study the graph to answer these questions.

The graph below shows the number of graduates (in '000) of different streams, in six different states of country.



**Question 111**

The total number of graduates of which two stream's from all the states taken together are in the ratio 4:5?



- A Science and Engg.
- B Science and Arts
- C Arts and IT
- D Engg. and IT

**Answer:** A

**Explanation:**

Let's check option A, i.e check whether Science and Engineering streams has ratio 4:5

Total number of graduates in science =  $(22 + 28 + 34 + 32 + 40 + 12) \times 1000 = 168 \times 1000$

Total number of graduates in Engineering =  $(24 + 28 + 62 + 58 + 12 + 26) \times 1000 = 210 \times 1000$

Ratio =  $168 \times 1000 : 210 \times 1000$

= 4 : 5

Hence, option A is the correct answer.

## Free Gk Tests

**Question 112**

In which two states is the number of IT graduates, as a percentage of the total number of graduates in that state, most nearly the same?

- A C and F
- B E and B
- C A and E
- D D and F

**Answer:** A

**Explanation:**

Percentage of IT graduates in state A,

$$= \frac{31}{46+31+23+22} \times 100 = \frac{3100}{122} = 25.4\%$$

Percentage of IT graduates in state B,

$$= \frac{38}{41+38+28+28} \times 100 = \frac{3800}{135} = 28.14\%$$

Percentage of IT graduates in state C,

$$= \frac{22}{62+34+26+23} \times 100 = \frac{2200}{145} = 15.17\%$$

Percentage of IT graduates in state D,

$$= \frac{18}{59+45+31+18} \times 100 = \frac{1800}{153} = 11.76\%$$

Percentage of IT graduates in state E,

$$= \frac{27}{38+28+24+12} \times 100 = \frac{2700}{102} = 26.47\%$$

Percentage of IT graduates in state F,

$$= \frac{16}{54+25+16+11} \times 100 = \frac{1600}{106} = 15.09\%$$

∴ Percentage of IT graduates in C and F is mostly same.

Hence, option A is the correct answer.

**Question 113**

By what percent is the sum total of Engg. graduates in B, C and F taken together greater than the sum total of Arts graduates in D and E taken together?

- A 56
- B 68
- C 65
- D 86

**Answer: B**

**Explanation:**

Total number of Engineering graduates in B, C, F taken together =  $28 + 62 + 26 = 116 \times 1000$

Total number of Arts graduates in D and E taken together =  $45 + 24 = 69 \times 1000$

$$\text{Required percentage} = \frac{116 - 69}{69} \times 100 = \frac{47}{69} \times 100 = 68\%$$

Hence, option B is the correct answer.

**Question 114**

The number of Science graduates in all the states combined is what percent of the number of graduates of all other streams taken together?

- A 28.5
- B 27.9
- C 29.7
- D 21.4

**Answer: B**

**Explanation:**

Total number of science graduates in all states =  $164 \times 1000$

Total number of graduates of all other streams taken together =  $(155 + 235 + 210) = 600 \times 1000$

$$\therefore \text{Required percentage} = \frac{164}{600} \times 100 = 27.9\%(\text{approx})$$

Hence, option B is the correct answer.

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**Question 115**

In which states is the difference between the number of Engg. and IT graduates higher than the difference between the number of Science and Arts graduates?

- A A, C and E
- B C, F and B
- C F, B and D
- D C, D and E

**Answer: D**

**Explanation:**

Difference between Engineering graduates and IT graduates and Science and arts graduates from all the states (in thousands) is given by,

In state A -  $|31 - 24| = 7$  and  $|22 - 26| = 4$

In state B -  $|38 - 28| = 10$  and  $|28 - 42| = 14$

In state C -  $|24 - 62| = 38$  and  $|35 - 28| = 7$

In state D -  $|18 - 58| = 40$  and  $|32 - 45| = 13$

In state E -  $|28 - 12| = 16$  and  $|39 - 24| = 15$

In state F -  $|18 - 26| = 8$  and  $|12 - 52| = 40$

Thus in states C, D, E Difference between Engineering graduates and IT graduates is higher than difference between Science graduates and

Arts graduates.

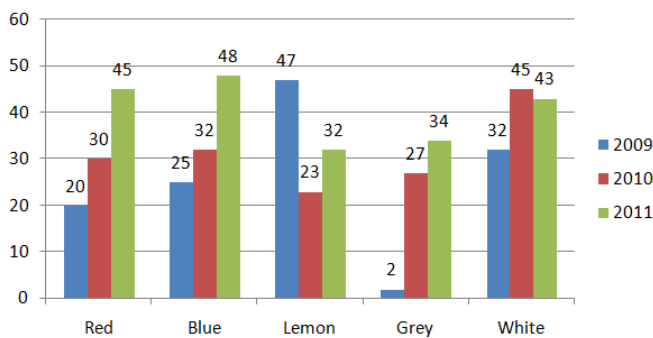
Hence, option D is the correct answer.

**Instructions**

Study the graph to answer these questions.

The graph below shows sales of different colour of Brand-X refrigerator for the year 2009, 2010 and 2011.

Brand-X: Sales volume by colour of refrigerator(in '000s)



**Question 116**

Over the given three years which has been the highest selling colour; and what percentage of volume did it account for?

- A Blue, 21%
- B white, 25%
- C white, 26%
- D Lemon, 28%

**Answer: B**

**Explanation:**

Sales of red colour refrigerator in all the given years in thousands =  $(20 + 30 + 45) = 95$

Sales of Blue colour refrigerator in all the given years in thousands =  $(25 + 32 + 48) = 105$

Sales of Lemon colour refrigerator in all the given years in thousands =  $(47 + 23 + 32) = 102$

Sales of Grey colour refrigerator in all the given years in thousands =  $(2 + 27 + 34) = 63$

Sales of White colour refrigerator in all the given years in thousands =  $(32 + 45 + 43) = 120$

Highest selling colour is white. Percentage of volume it accounted for, is given by,

$$\text{Required percentage} = \frac{120}{95+105+102+63+120} \times 100$$

$$= \frac{12000}{485} = 25\% \text{ (approx)}$$

Hence, option B is the correct answer.

**Question 117**

**Sale of which colour(s) of refrigerator registered the highest percentage increase between 2010 and 2011?**

- A Blue
- B Lemon
- C Red and Blue
- D Grey

**Answer: C**

**Explanation:**

$$\text{Percentage increase in red colour from 2010 to 2011} = \frac{45-30}{30} \times 100 = \frac{15}{30} \times 100 = 50\%$$

$$\text{Percentage increase in blue colour from 2010 to 2011} = \frac{48-32}{32} \times 100 = \frac{16}{32} \times 100 = 50\%$$

$$\text{Percentage increase in Lemon colour from 2010 to 2011} = \frac{32-23}{23} \times 100 = \frac{9}{23} \times 100 = 39.13\%$$

$$\text{Percentage increase in Grey colour from 2010 to 2011} = \frac{34-27}{27} \times 100 = \frac{7}{27} \times 100 = 25.92\%$$

There is no increase from 2010 to 2011 in white colour.

Sales in red and blue colour registered highest percentage increase.

Hence, option C is the correct answer.

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**Question 118**

**What is the share of sales volume accounted for by the year 2011?**

- A 43.26%
- B 46.14%
- C 44.16%
- D 41.64%

**Answer: D**

**Explanation:**

$$\text{Sales in 2011} = 45 + 48 + 32 + 34 + 43 = 202$$

Sales of all the refrigerator's in all the years

$$= (20 + 30 + 45) + (25 + 32 + 48) + (47 + 23 + 32) + (2 + 27 + 34) + (32 + 45 + 43) = 485$$

Share of sales volume accounted for by the year 2011 is given by,

$$= \frac{202}{485} \times 100 = 41.64$$

Hence, option D is the correct answer.

**Question 119**

**What is approximately the ratio of sales of Red, Lemon and White refrigerators, taken together, in 2010 to that of the combined total sales of Blue and Grey ones in 2009 and 2011 taken together?**

- A 9 : 10
- B 10 : 9
- C 11 : 12
- D 1 : 1.2

**Answer:** A

**Explanation:**

Total sales of Red, Lemon and White refrigerator taken together in 2010 = (30 + 23 + 45) = 98

Total sales of Blue and Grey ones in 2009 and 2011 taken together = (25 + 2 + 48 + 34) = 109

Ratio between them = 98 : 109  $\cong$  9 : 10

Hence, option A is the correct answer.

**Question 120**

**How many instances are there in the graph where the difference in sale of refrigerators was greater or lesser by 35% or more as compared to the previous year?**

- A 4
- B 5
- C 6
- D 7

**Answer:** B

**Explanation:**

Percentage in sale of refrigerator,

For red =  $\frac{15-10}{10} \times 100 = 50\%$

For Blue =  $\frac{16-7}{7} \times 100 = 128.5\%$

For Lemon =  $\frac{9-24}{24} \times 100 = -62.5\%$

For Grey =  $\frac{7-25}{25} \times 100 = -72.5\%$

For White =  $\frac{2-13}{13} \times 100 = -84.6\%$

There are 5 instances where the difference in sale of refrigerator was greater or lesser than 35% or more as compared to the previous year.

Hence, option B is the correct answer.

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### Intelligence & Critical Reasoning

**Instructions**

Each of these questions has a statement followed by two conclusions I and II. Consider the statement and the following conclusions. Decide which of the conclusions follows from the statement.

**Question 121**

**Statement:**

**India has great potential for consumer products.**

**Conclusions:**

- I. Inflation is curbing demand for consumer products.**
- II. A very large population of the country has a great appetite for consumer products.**

- A** if conclusion I follows
- B** if conclusion II follows
- C** if neither conclusion follows
- D** if both conclusions follow

**Answer: B**

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**Question 122**

**Statement:**

**Introduction of computers and networking revolutionised banking services.**

**Conclusions:**

- I: Computers have reduced paperwork to a very large extent**
- II. All banking functions can be operated and viewed easily on computers.**

- A** if conclusion I follows
- B** if conclusion II follows
- C** if neither conclusion follows
- D** if both conclusions follow

**Answer: A**

**Question 123**

**Statement:**

**Productivity of Indian agriculture is very low.**

**Conclusions:**

- I. Indian agriculture is largely dependent on timely rains**
- II. Indian farmers have not introduced latest technology into the system**

- A** if conclusion I follows
- B** if conclusion II follows
- C** if neither conclusion follows
- D** if both conclusions follow

**Answer: D**

**Instructions**

Read the following information to answer these questions.

- I. P, Q, R, S, T and U are the six members of a family**
- II. There is one Doctor, one Advocate, one Engineer, one Teacher, one Student**

- and one Housewife among them.  
III. There are two married couples in the family.  
IV. U, who is an Advocate, is father of P.  
V. Q is a Teacher and is mother of R.  
VI. S is grandmother of R and is a Housewife.  
VII. T is the father of U and is a Doctor  
VIII. R is the brother of P.

**Question 124**

Which of the following statements is definitely true?

- A U is father of the Engineer
- B P is the Engineer
- C T is father of the Teacher
- D R is brother of the Student

Answer: A

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**Question 125**

How many female members are there in the family?

- A Three only
- B Two or three
- C Two only
- D Three or four

Answer: B

**Question 126**

How is P related to S?

- A Either grand daughter or grand son
- B Grand mother
- C Grand son
- D Grand daughter

Answer: A

**Instructions**

Read the following information to answer these questions.

In a family, there are 10 members, G and N are a married couple while K is the husband of X. In this family, there are four housewives and four working husbands while other members are non - working. The husband in the last generation is a doctor and the husband of S is a teacher. L is a married woman but her husband is not P. Q and K are associated with the profession of engineer and accountant but K is not an accountant. P is the brother of T and both have a sister O. N is the daughter of L and X is the mother of P.

**Question 127**

The family consists of how many generations?

- A 6
- B 1
- C 4
- D 2

Answer: C

## MAT Free Solved Previous Papers

### Question 128

Who is the husband of S?

- A T
- B K
- C L
- D P

Answer: D

### Question 129

Which of the following statements is not true?

- A Husband of X is an engineer.
- B Second generation members are S, P, T and O.
- C The number of female members in the family is 5.
- D The accountant and his wife belong to the 4th generation.

Answer: D

### Instructions

Read the following information to answer these questions.

If 'A × B' means 'A is father of B'.

If 'A + B' means 'A is wife of B'.

If 'A ÷ B' means 'A is daughter of B'.

If 'A - B' means 'A is son of B'.

### Question 130

Which of the following means D is definitely daughter of A?

- A  $A \$ B \# C \# D$
- B  $C \Psi A \$ D \epsilon B$
- C  $A \Psi C \$ B \epsilon D$
- D  $B \Psi A \$ C \# D$

Answer: B



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### Question 131

Which of the following means R is brother of T?

- A  $R \Psi S \# U \$ T$
- B  $U \Psi R \# S \# T$
- C  $U \Psi R \epsilon S \# T$
- D  $K \# R \$ S \epsilon T$

Answer: B

### Question 132

Which of the following means A is nephew of C?

- A  $D \# C \$ B \# A \epsilon E$
- B  $A \# B \$ D \epsilon E \$ C$
- C  $C \# D \$ B \# A \$ E$
- D  $B \Psi E \# C \$ E \epsilon A$

Answer: C

### Instructions

Read the following information to answer these questions.

There is a group of six persons A, B, C, D, E and F from a family. They are a Psychologist, Manager, Lawyer, Jeweller, Doctor, and Engineer.

- (i) The doctor is the grandfather of F who is a Psychologist.
- (ii) The manager D is married to A.
- (iii) C, the Jeweller is married to the Lawyer.
- (iv) B is the mother of F and E.
- (v) There are two married couples in the family.

### Question 133

What is the profession of K?

- A Doctor
- B Clerk
- C Engineer
- D Accountant

Answer: C

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### Question 134

How many male members are there in the family?

- A Two
- B Three
- C Four
- D Cannot be determined

Answer: D

**Question 135**

How is G related to K?

- A Wife
- B Father
- C Grandmother
- D Grandfather

Answer: D

**Instructions**

Read the following information to answer these questions.

There are six children playing football namely G, H, I, J, K and L. G and K are brothers. L is the only sister of K. I is the only son of G's uncle. H and J are the daughters of the brother of I's father.

**Question 136**

How is J related to G?

- A Sister
- B Niece
- C Cousin
- D Uncle

Answer: C

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**Question 137**

How is I related to L?

- A Cousin
- B Son
- C Uncle
- D Brother

Answer: A

**Question 138**

How many male players are there?

- A One
- B Three
- C Four
- D Five

**Answer: B**

**Instructions**

In each of these questions, two statements I and II are given. These may have a cause and effect relationship or may have independent causes or be the effects of independent causes.

**Question 139**

**Statement I:**

Drinking tea has a number of health benefits. A cup of the beverage can help slash the risk of developing cancer by shrinking tumours.

**Statement II:**

The new research has shown that black tea could help prevent cancer. The compound Theaflavin-2 which has antioxidant properties reduces the risk of some cancers as well as heart disease.

- A if statement I is the cause and statement II is its effect.
- B if statement II is the cause and statement I is its effect.
- C if both the statements I and II are effects of independent causes.
- D if both the statements I and II are effects of some common cause.

**Answer: B**

**MAT Free Solved Previous Papers**

**Question 140**

**Statement I:**

India has lost a staggering \$ 462 billion in illicit financial flows due to tax evasion, crime and corruption post - Independence according to a report released by Washington-based Global Financial Integrity.

**Statement II:**

More than 40% of the FDIs to India originate from Mauritius. Mauritius has now agreed to negotiate and revise the existing Double Taxation Avoidance Agreement (DTAA) with India, as capital gains is exempted from tax in Mauritius and a Mauritian company cannot be taxed in India.

- A if statement I is the cause and statement II is its effect.
- B if statement II is the cause and statement I is its effect.
- C if both the statements I and II are effects of independent causes.
- D if both the statements I and II are effects of some common cause.

**Answer: C**

**Question 141**

**Statement I:**

Not a single Indian University, including the IITs, has fared well in an all-Asian varsity ranking for the year 2011. IIT - Bombay is the only one to figure in the world top 200 at 187, lower than the previous year's rank of 163.

**Statement II:** A university founded merely two decades ago- the Hong Kong University of Science and Technology- has topped the charts. The university of Cambridge got a perfect 100. All the seven old IITs have made it to the Asian University ranking, but their ranks have slid.

- A if statement I is the cause and statement II is its effect.
- B if statement II is the cause and statement I is its effect.
- C if both the statements I and II are effects of independent causes.
- D if both the statements I and II are effects of some common cause.

**Answer: D**

**Instructions**

Each of these question consists of a pair of words bearing a certain relationship. From amongst the given alternatives, pick up the pair that best illustrates a similar relationship.

**Question 142**

**Presumption: Certainty**

- A Falsehood : Truth
- B Hearsay : Authenticity
- C Theorem : Proof
- D Hunch : Guess

**Answer: B**

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**Question 143**

**Coal : Thermal**

- A Power : Energy
- B Bulb : Light
- C Air : Atmosphere
- D Water : Hydel

**Answer: D**

**Question 144**

**Court : Justice**

- A Police : Crime
- B Teacher : Study
- C Doctor : Sickness
- D Auditor : Accuracy

**Answer: C**

**Question 145**

**Relaxation : Work**

- A Play : Cheat
- B Lunch : Dinner
- C Smile : Laugh
- D Fresh : Stale

**Answer: D**

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**Instructions**

Complete the series by replacing the '?'

**Question 146**

**B0R, E3U, G9Y, J18D, ?**

- A E30P
- B H27N
- C L30J
- D G33U

**Answer: C**

**Question 147**

**A729, G343, ?, S9, Y1**

- A L64
- B M75
- C Q100
- D M125

**Answer: D**

**Question 148**

**Q331T, U442X, Y553A, ?**

- A Z665D
- B C664C
- C B666D
- D B664F

Answer: B

## Daily Free Topic Test

### Question 149

RL12, TQ20, WU32, AX48, ?

- A EZ68
- B FZ68
- C GZ68
- D HZ68

Answer: B

### Question 150

V2R, Y8T, B15V, E76X, ?

- A F350Z
- B G452Z
- C H355B
- D H355Z

Answer: D

### Instructions

For the following questions answer them individually

### Question 151

How is the son-in-law of my wife's only sister related to my wife's brother?

- A Cousin
- B Nephew
- C Uncle
- D Son-in-law

Answer: D

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**Question 152**

'B', the son of 'A', was wedded to 'C' whose sister 'D' was married to 'E'. If E is the brother of 'B', how is 'D' related to 'A'?

- A Sister
- B Daughter
- C Daughter-in-law
- D Cousin

**Answer: C**

**Question 153**

Krishna is the mother - in - law of Bindu who is the sister - in - law of Ahsaan. Dharmender is the father of Sandeep, the only brother of Ahsaan. How is Krishna related to Ahsaan?

- A Wife
- B Aunt
- C Mother - in - law
- D Mother

**Answer: D**

**Question 154**

A clock is placed in such a manner that at 12 o'clock, its minute-hand points towards north-east. In which direction does its hour-hand point at 1 : 30 pm?

- A West
- B South
- C North
- D East

**Answer: D**

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**Question 155**

Ram starts from his house on cycle and goes 10 km towards North - East. He turns to the left and cycles 8 km, then he turns towards South - East and cycles for another 10 km. Finally, he turns towards his house. In which direction is he going now?

- A South
- B South - East
- C West
- D North - West

Answer: D

**Question 156**

Mahender walked 30 metres towards east, took a right turn and walked another 40 metres. He again took a left turn and moved 30 metres. In which direction is he now from the starting point?

- A North - East
- B East
- C South - East
- D South

Answer: C

**Instructions**

Each of these questions has an assertion (A) and a reason (R).

**Question 157**

**Assertion (A):** It has now been proved that eating high fat diets, having decreased level of exercise and leading a stressful life lead to heart problems.  
**Reason (R):** Fatty diets clot the blood in our arteries and hence sufficient amount of blood can't reach the heart vessels.

- A if both 'A' and 'R' are true and 'R' is the correct explanation of 'A'.
- B if both 'A' and 'R' are true but 'R' is not the correct explanation of 'A'.
- C if 'A' is true but 'R' is false.
- D if 'A' is false but 'R' is true.

Answer: A

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**Question 158**

**Assertion (A):** The screening of film 'ABC' has been stopped due to a High Court order.  
**Reason (R):** People abide by the decisions of the High Court.

- A if both 'A' and 'R' are true and 'R' is the correct explanation of 'A'.
- B if both 'A' and 'R' are true but 'R' is not the correct explanation of 'A'.
- C if 'A' is true but 'R' is false.
- D if 'A' is false but 'R' is true.

Answer: A



**Question 159**

**Assertion (A):** Residents of 'XYZ' colony in Delhi are agitating against the irregular and inadequate water supply in their colony.

**Reason (R):** Agitation is a basic right of people to get the water supply for their survival.

- A if both 'A' and 'R' are true and 'R' is the correct explanation of 'A'.
- B if both 'A' and 'R' are true but 'R' is not the correct explanation of 'A'.
- C if 'A' is true but 'R' is false.
- D if 'A' is false but 'R' is true.

**Answer:** A

**Question 160**

**Assertion (A):** A student who is indisciplined brings a bad name to himself, his parents, his teachers and also to his institute.

**Reason (R):** We must find out the grievances of our students and try to resolve them to a reasonable level so that it generates self-discipline in them.

- A if both 'A' and 'R' are true and 'R' is the correct explanation of 'A'.
- B if both 'A' and 'R' are true but 'R' is not the correct explanation of 'A'.
- C if 'A' is true but 'R' is false.
- D if 'A' is false but 'R' is true.

**Answer:** B

## Daily Free Topic Test

### Indian & Global Development

**Instructions**

For the following questions answer them individually

**Question 161**

**Julia Gillard is currently the Prime Minister of**

- A Uk
- B Holland
- C France
- D None of these

**Answer:** D

## MAT Free Solved Previous Papers

**Question 162**

**World post Day is celebrated on**

- A 9 October
- B 30 January
- C 2 November
- D 27 November

**Answer: A**

**Question 163**

Who among the following became the President of Venezuela of the third consecutive term?

- A Henrique Capriles
- B Hugo Chavez
- C Tanvir Mahmud
- D None of these

**Answer: B**

**Question 164**

Britain and Scotland have signed an agreement to hold a referendum in ..... on the latter's independence

- A 2015
- B 2014
- C 2016
- D 2017

**Answer: B**

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**Question 165**

Who among the following is the teenaged Pakistani girl activist who became famous world wide after a near fatal attack on her?

- A Kainat
- B Shazia
- C Malala
- D None of these

**Answer: C**

**Question 166**

Monisha Kaltenborn is associated with which sport?

- A Golf

- B Cycling
- C Formula One
- D Lawn Tennis

**Answer: C**

**Question 167**

**Who was captain of the West Indies cricket team that won the T-20 Cricket World Cup 2012 held in Srilanka?**

- A Kieron Pollard
- B Chris Gayle
- C Dwayne Bravo
- D Darren Sammy

**Answer: D**

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**Question 168**

**Wayne Rooney of England is a well known player of**

- A Polo
- B Football
- C Lawn Tennis
- D Chess

**Answer: B**

**Question 169**

**Which of the following cities will be hosting the next Olympic Games to be held in 2016?**

- A Moscow
- B Melbourne
- C Rio de Janeiro
- D Toronto

**Answer: C**

**Question 170**

**Which car company has recently launched SUV segment vehicle 'Quanto' in india?**

- A BMW
- B Skioda
- C Mahindra and Mahindra

D Ford

Answer: C

## Daily Free Topic Test

Question 171

The Diesel Loco Modernization Works of India Railways is situated in

A Ludhiana

B Chennai

C Patiala

D Kolkata

Answer: C

Question 172

The Government recently cancelled the permission given to ..... for setting up of a Special Economic Zone (SEZ) in Mundra in Gujarat due to charge of violation of the SEZ Act

A Reliance Group

B Aditya Birla Group

C Adani Group

D Godrej Group

Answer: C

Question 173

Which Indian IT company has recently acquired consulting firm Lodestone?

A TCS

B Wipro

C Infosys

D Mahindra-Satyam

Answer: C

## MAT Free Solved Previous Papers

Question 174

Which of the following is an Indian origin banking firm?

A HSBC

B CitiBank

C YesBank

D RBS

Answer: C

Question 175

POSCO is a major steel of which country?

A Korea

B China

C Indonesia

D None of these

Answer: A

Question 176

Steve Ballmer is the CEO of which corporate?

A Vodafone

B Microsoft

C Google

D None of these

Answer: B

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Question 177

Which of the following brand of cars is owned by the Japanese automobile major Nissan

A Rapid

B Brio

C Sunny

D EON

Answer: C

Question 178

The tag line 'The power to do more' is linked with

A Dell

B Lenova

C HP

D Sony

Answer: A

**Question 179**

Timothy Geither is currently the treasure secretary of which country?

- A France
- B US
- C England
- D None of these

**Answer: B**

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**Question 180**

Information technology corporate giant Apple recently won a \$1.05 billion patent case against

- A Samsung
- B LG
- C Hyundai
- D Philips

**Answer: A**

**Question 181**

World Bank has recently appointed.....as its chief economist and senior vice president

- A Montek Singh Ahluwalia
- B Kaushik Basu
- C Amartya Sen
- D C. Rangarajan

**Answer: B**

**Question 182**

Which of the following corporate houses is the India Partner of global coffee chain 'starbucks'

- A Tatas
- B Aditya Birla
- C Godrej
- D None of these

**Answer: A**

**Daily Free Topic Test**

**Question 183**

**Which state has the largest urban population in India?**

- A Maharashtra
- B Kerala
- C Chattisgarh
- D West Bengal

**Answer: A**

**Question 184**

**Mr.hamid Ansai was re-elected as india's .....president**

- A 13<sup>th</sup>
- B 14<sup>th</sup>
- C 12<sup>th</sup>
- D 11<sup>th</sup>

**Answer: B**

**Question 185**

**'DreamYuga' is motorbike launched by which company?**

- A Hero
- B Honda
- C TVS
- D Yamaha

**Answer: B**

## **MAT Free Solved Previous Papers**

**Question 186**

**Which Insurance company uses the tag line 'jiyo befikar'?**

- A LIC
- B ICICI Prudential
- C TATA-AIG
- D Bajaj Allianz

**Answer: D**

**Question 187**

**Which India City has an IIT and IIM both situated in india?**

- A Indore
- B Raipur
- C Kozikhode
- D Bengaluru

**Answer: A**

**Question 188**

**Who became the first woman speaker of Lok Sabha in india?**

- A Sarojini Naidu
- B Meira Kumari
- C Arun Asif Ali
- D Indira Gandhi

**Answer: B**

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**Question 189**

**Kargil Vijay Divas is celebrated on.....every year in honour of kargil war heroes**

- A 2 November
- B 26 July
- C 27 November
- D 15 July

**Answer: B**

**Question 190**

**CBDT stand for**

- A Central Boards of Direct Tarrifs
- B Central Boards of Direct Taxation
- C Central Boards of Direct Taxes
- D Central Boards of Daily Taxes

**Answer: C**

**Question 191**

**Which is the most mobile chess piece?**

- A Rook



B Horse

C Queen

D Bishop

Answer: C

## Free Gk Tests

### Question 192

Thomas Cup is associated with which sport?

A Badminton

B Golf

C Tennis

D Hockey

Answer: A

### Question 193

Indian Institute of Sugarcane Research is located at

A Nasik

B Lucknow

C Meerut

D Pune

Answer: B

### Question 194

Telecom giant 'NOKIA' comes from

A Germany

B Finland

C Poland

D Australia

Answer: B

## Daily Free Topic Test

### Question 195

Which Indian state projects itself as 'God's Own Country'?

A Uttarakhand

- B UP
- C Kerala
- D MP

Answer: C

**Question 196**

Which country includes its income cocaine and narcotics in its GDP?

- A Columbia
- B Venezuela
- C Afghanistan
- D Peru

Answer: A

**Question 197**

Which of the following sectors is not the part of infrastructure?

- A Railways
- B Power
- C Food Processing
- D Roads

Answer: C

## MAT Free Solved Previous Papers

**Question 198**

Which among the following is the oldest development financial institution of India?

- A UTI
- B IDBI
- C ICICI
- D IFCI

Answer: D

**Question 199**

'Prima' is a newly launched

- A Car
- B Tractor
- C Truck

D motor-cycle

Answer: C

Question 200

Dudhwa National Park is located on

A UP

B Uttarakhand

C MP

D West Bengal

Answer: A

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