

Part II

Section - 7

Q-NO-2

(a) Artificial intelligence is the new electricity:
As everybody knows the new generation will be nothing but age of intelligence. In this era of information, where everything is digital, electricity is used as a fuel for the development of the world. In previous age that was industrial hydrocarbons were used for the development, and the main development of that was the generation of electricity. That was and still using in the development and progress of the universe. So, the same transformation will go on, and in the near future, that is even begin, the Artificial intelligence (AI) would be used by people for even more progress of the world in the same way that of electricity ^{usage} for the development. Electricity used as a fuel now the Artificial intelligence would be there to perform the role instead of Electricity.

(b)

CPU is brain of Computers:

- CPU performs the same function that human brain performs - It will not be wrong if we say that both are the central processing units of their respective bodies.
- CPU process an input signal to the computer to perform the task, the same way brain gives the signal regarding something.

- If there is a deficiency or need to be fulfilled, CPU indicate it on the Computer screen. While the brain give signal to to the human body to the concern part where there is an issue.
- CPU decides wheather the input signal is good or not for the Computer in the same brain warns regarding anything harmful for human.
- Neither Computer exist without CPU not human body without the brain-

Part - c

Balance diet:

- By balance diet we means that the food that we eat contains the required amount of proteins, fats, carbohydrates, minerals, and vitamins or not. If all these included in a diet we say that the diet is balance.
- If there is a deficiency of anything (from the above), then it's required amount then it is said to be imbalance diet.
- Balance diet is a healthy while Unbalance diet is usually unhealthy.
- Meat, Pulses, grains, Vegetables, fruits, Dairy product are the source of balance diet.

Deficiency of Vitamin

A: Effects the eyesight.

B: Blood Problems are mainly Caused.

C: Cause a disease called Scurvy

Part - D.

Optical fibres

- Optical fibre is usually a single layered ~~wire~~ used for the transmission purposes.
- It is surrounded by other two layers as well that helps it in protection and fast transmission.

"GPS"

- Geo-Positioning Satellite, (GPS) is a satellite used for the information collection from the earth - -
- It captures images, collect information and sent it back to the earth -
- It is highly used for live transmission, and could be also used for weather and forecasting purposes as well.

2D, 3D location

- 2-Dimension and 3-Dimension locations can be measured by the satellite through its live detection or presence at certain point.

Q NO 3.

"Part - a"

"Why atoms form chemical bonds"

→ Every object of the universe trying to attain some sort of stability. In the same way an atom also try to attain the stability by completing its outer most shell with $\overset{\cdot\cdot}{\text{e}}$ electrons through chemical bonding.

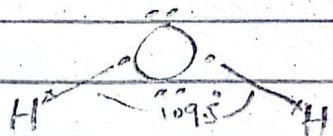
→ This can be achieve either by:

- (i) Ionic bonding
- (ii) Covalent bonding
- (iii) Co-ordinate covalent bonding OR
- (iv) Metallic bonding.

"Covalent Bond"

in Water H_2O

- The bond formed by the mutual sharing of electrons is covalent bonding.
- In water (H_2O), two hydrogen atoms share its outer electron (1 in each) with a single oxygen atom (valency of two) and forms water molecule.
- By this hydrogen atoms complete two electrons and attain stability.
- Oxygen complete octet in the shell and becomes stable.



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Part - b - Q #3.

"Doping"

- The addition of impurities with a certain atom is known as doping.
- This could be either added from the group-III or group V of the periodic table elements.
- From group III it is said to be P-type and from V it is known to be N-type.

Types of Ceramic:

On the basis of Composition, Ceramic has three types:

- (i) oxide
- (ii) Non-oxide
- (iii) Composite: Combination of both oxides and non-oxides.

Part - c, Q #03

Merits of Global warming:

- (i) Growth of certain plant happens in the warm environment.
- (ii) Alleviate certain disease by killing bacteria sensitive to the warmth.
- (iii) Fulfills the availability of water by melting the glaciers and snow on mountain tops.
- (iv) Eradicate the chances of drought.
- (v) The water is abundant, and can be used for agriculture purposes.

"Demerits of Global warming"

- (a) Ozone depletion is caused by global warming.
- (b) It can cause floods in the river.

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- (c) A major Cause of Green house gasses
- (d) Change the weather pattern and specially rain pattern
- (e) Cause certain social and economical Problems.

Part - d - Q #03.

"Polio"

- ↳ Polio is a Viral disease, mainly caused in the new born and small babies.
- ↳ The major cause / victims are Children because they have a weak immune system and could easily be attacked and damaged by the virus.

Challenges in Pakistan to eradicate Polio:

(i) Lack of education.

Due to the lack of education in our society, we do not take the polio serious and trying to avoid the polio vaccination to our children.

(ii) Religious thoughts

Some people think that the vaccine are non-muslims manufactured, so they do not want to immunise their children.

(iii) Clergical believes:

The society of Pakistan is majorly illiterate and easily come in grab of so called cleric (Not all), but some of them has declared it as illegitimate - And Pakistani society are is the biggest followers of such people.

(iv) Cep Concept of Certain Parents:

Some parents think that there is something else in the vaccine instead of medicine. And thinks of it a Conspiracy of Pagans to harm and sow the seed of stupidity in the new generation.

Section II

Q.# 07, Part a:

Volume of cylinder:

Given data:

Radius of cylinder $r = 30 \text{ cm}$ or 0.30 m

Height of cylinder $h = 1 \text{ m}$.

Required data:

Volume of cylinder $V = ?$

Calculations:

As we know $V = \pi r^2 h$

Put values $V = (3.14)(0.30)^2 (1)$

$$= (3.14)(0.09) (1)$$

$$= \frac{314}{100} \times \frac{90}{100}$$

$$= \frac{28260}{10000}$$

$$= \frac{28260}{10000} = 0.2826 \text{ m}^3$$

$$= \frac{28260}{10000} \text{ m}^3$$

$$\text{OR} = \frac{2826 \times 100 \text{ cm}^3}{10000}$$

$$= 28.26 \text{ cm}^3$$

Q-7 Part-b

Given: Age of three boys = 15 years
Ratio of ages = 3:5:7

Required

Age of youngest boy = ?

Calculations

$$\text{Sum of ratio} = 3+5+7 = 15$$

Age of 1st boy:

$$= \frac{3}{15} \times 15$$

$$= 3 \times 1 = 3 \text{ Years}$$

Age of second:

$$= \frac{5}{15} \times 15$$

$$= 5 \times 1 = 5 \text{ Years}$$

Age of third boy:

$$= \frac{7}{15} \times 15$$

$$= 7 \times 1 = 7 \text{ Years}$$

Youngest boy is 3 years old.

Q-7 - Part - c

Series

(i) 8, 19, 52, 151, 447, ...

⇒ Here 151 is wrong in the series.

(ii) 11, 13, 17, 19, 23, ...

⇒ The next in this series will be 29

As it is the series of Composite numbers.

Q-7, Part-d.

Given:

Triangle of sides 5cm, 4cm, 6cm

Required:

Angle of each side = ?

Calculation:

A triangle can't be drawn with this data (data is incomplete). The sides are unequal in length, they will not touch each side -

Q#6, Part-D:

Arrange jumbled words

(i) tenuisupted.

Suprintendent.

(ii) hweti

White

Q6 - Part - c.

Given: Distance $S = 42 \text{ km}$

Speed $V = 36 \text{ km/hr}$, Departure = 4 Pm

Required

Time to reach $t = ?$

Calculation As we know $S = vt$

$$42 = 36 \times t$$

$$t = \frac{42}{36}$$

$$t = 1.16 \text{ h}$$

$$\text{or } t = 69.6 \text{ mins}$$

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The train will arrive to its destination in 1.16 hr
or in 69.6 mins. It means the train departed at
4pm will reach there after 69.6 mins

The arrival time will be approximately:

5:09:06 Pm 5:10 Pm

OR 5 hrs, 9 mins and 06 seconds in evening

Q No 06 Part B:

Given: Cost of shoes = 80 USD

Discount = 15%

Sales tax = 10%

Required

Final Price = ?

Calculation:

As discount is 15%

Price after discount:

$$= 80 \times 15\%$$

$$= 12 \text{ USD Discount}$$

$$\text{Price after discount} = 80 - 12$$

$$= 80 - 12 = 68 \text{ USD}$$

Now 10% sales tax is to be imposed

$$= 68 \times 10\%$$

= 6.8 USD of tax on the
Pair of shoes

Final price will be:

$$= 68 + 6.8$$

$$= 74.8 \text{ USD.}$$

Q No 6 - Part-A

Given :

Ratio of toys 4:7:3:1 of blocks A, B, C, D
"A" block is 50 more toys than "C"

Required :

Number of toys in "B" block.

Calculations:

Toys in Block "C"

$$C + 50 = A$$

$$\text{Sum of ratio} = 4 + 7 + 3 + 1 = 15$$

$$\text{Toys in A block} = \frac{A}{15} \times 4$$

$$= \frac{4A}{15} \rightarrow (1)$$

$$\text{Toys in B block} = \frac{7}{15} \times B$$

$$= \frac{7B}{15} \rightarrow (2)$$

$$\text{C-block} = \frac{3}{15} \times C$$

$$= \frac{C}{5} \rightarrow (3)$$

$$\text{D-block} = \frac{1}{15} \times D$$

$$= \frac{D}{15} \rightarrow (4)$$

As $A = C + 50$ Put in (1)

$$\frac{C + 50}{15} \rightarrow (5) \text{ Compare with (3)}$$

$$5 \times \frac{C + 50}{15} = \frac{C}{5}$$

$$5(C + 50) = C \times 15$$

$$5C + 250 = 15C$$

$$5C + 250 = 15C$$

$$250 = 15C - 5C$$

$$250 = 10C$$

$$10C = 250$$

$$C = 25 \text{ Toys}$$

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Block A has

$$A = C + 50$$

$$A = 25 + 50$$

$$A = 75 \text{ Toys}$$

Block "B" has

$$B = 150 = A$$

$$B = 75 + 150$$

$$B = 225 \text{ Toys}$$

Block "D" has

~~$$D = 20 = C$$~~

$$D + 20 = C$$

$$D = 25 - 20$$

$$D = 5 \text{ Toys}$$