Name : Bilal Hussain.
ID : "7493"
Subject : Transportation & Plaining & Engg.
Submitted To : Engr. Muhammad Majid Naeem.

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Answer # 01

Given :-

→ 60000 vehicle monthly (30days)

→ Peak flow rate of 550 vehicle @ 15 min

Required :-

Number of vehicle moving per lane per hour in each direction = ?

PHF = ?

Solution :-

60000 vehicle move in 30 days

$$\text{vehicle per day} = \frac{60000}{30} = 2000/\text{day}.$$

Now vehicle per hour

$$\frac{2000}{24} = 83.3 \simeq 84 \text{ veh/hr}.$$

Consider three lines in each direction so total six lines both side

$$\frac{84}{6} = \boxed{14}$$

Hence 14 vehicle are moving per lane per hour

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Now

$$PHF = \frac{\text{Hourly vol}}{4 \times \text{max 15 min vol within hour}}$$

$$PHF = \frac{14}{4 \times 550}$$

$$\boxed{PHF = 0.0063}$$

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Answer #02

vehicle number	Distance in meter	Travel Time minutes	Speed km/h
1	1400	1·31	64.122
2	1400	1·51	55.629
3	1200	1·11	64.865
4	1500	0·90	100.00
5	1600	1·12	85.714
6	1800	1·52	71.053
7	1200	1·45	49.655
8	950	0·90	63.33
9	1175	1·33	53.088
10	1200	1·13	63.717
11	1300	1·30	60.000
12	1400	1·20	70.00
13	1800	1·24	87.097
14	1700	1·11	91.892
15	1800	1·00	108.00
16	2100	1·12	112.500
17	1200	0·87	82.857
18	1700	1·40	72.857
19	1600	1·21	79.339
20	1700	0·55	185.455
Total / average	29725/20	23.28/20	1620.995/20
	= 1.48625 (km)	= 0.0194 (hr)	= 81.049 km/hr.

Day: M T W T F S (G) Date: ___/___/___

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$$TMS = \frac{\Sigma \text{ speed}}{n}$$

$$= \frac{1620.995}{20}$$

$$TMS = 81.049 \text{ Km/hr.}$$

$$SMS = \frac{nx}{\Sigma T}$$

$$= \frac{20 \times 1.48625}{0.388}$$

$$= \frac{29.725}{0.388}$$

$$SMS = 76.61 \text{ km/hr}$$

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Answer = 3

Ans

Railway Engineering :-

→ The branch of Civil Engineering which deal with the planning design, construction, operation and maintenance of the railway tracks for safe and efficient movement of trains (People and goods) is called railway Engineering.

→ Primary objective of Railway Engineering.

→ Safety.

→ Efficiency.

History of Railway Engineering :-

→ The history of railway is closed linked with the development of civilization.

→ As the necessity arose, human beings developed various methods of transporting good from one place to another.

→ In the Primitive days good were carried as helds loads or in carts drawn by men and animal.

→ Then efforts were made to replace animal Paver with mechanical power.

→ In 1769, Nicholes Carnot, a frenchman, carried out the Pioneering work of developing steam energy.

→ This work had very limited Success and it was only in 1804 that (Richard Trevithick) designed and Constructed a steam locomotive.

→ This locomotive, however, Could be used for traction on roads only.

→ The credit of Prefecting the design goes to George Stephenson who in 1814 developed that the first steam locomotive used for traction on railways.

→ In 1769 Nicholes Carnot a frenchman, carried out the Pioneering work of developing steam energy.

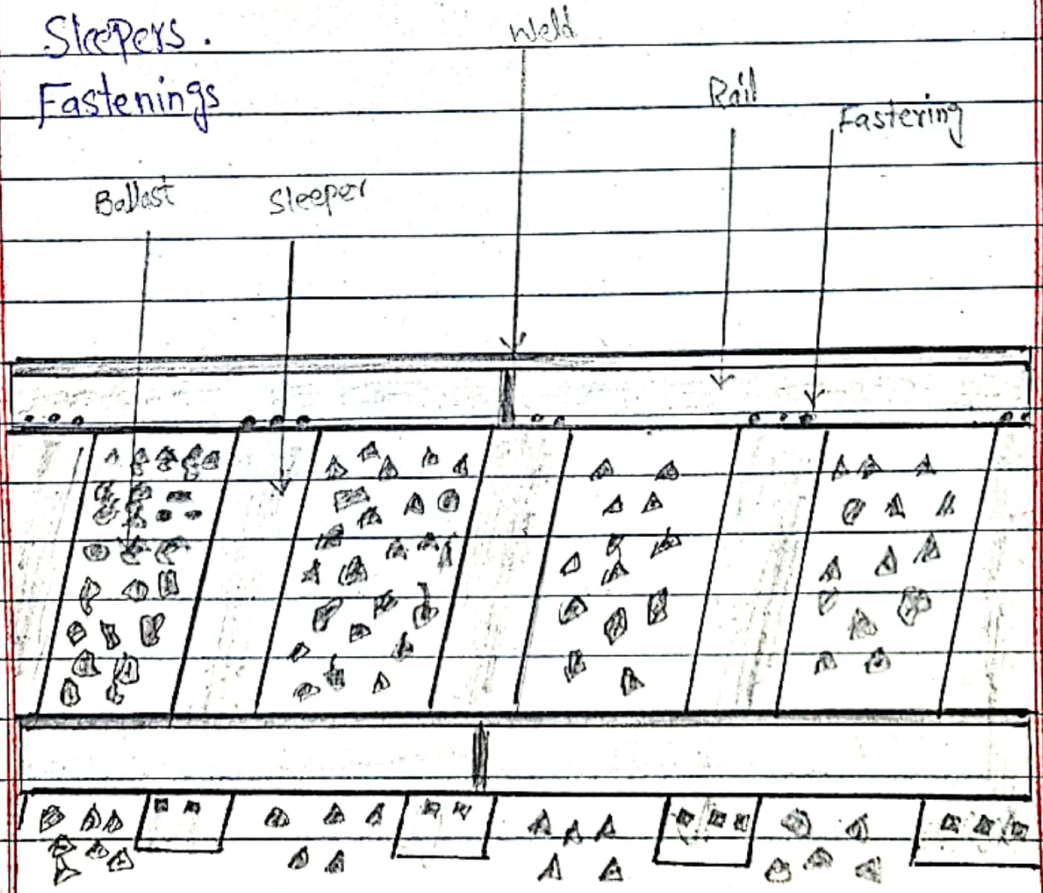
→ The first Public railway in the world was opened to traffic on 27th sep 1825 in UK.

Components of Railway tracks :-

An engineered structure consisting of two metal guiding rails on which vehicle are self propelled or pulled by a locomotive is called a railway track.

Components :-

→ Rails.
→ Ballast.
→ Sleepers.
→ Fastenings



Answer #04

AirPort Engineering :-

→ AirPort Engineering encompasses the planning, design, and construction of terminals, runways, and navigation aids to provide safe movement for passenger and freight service

→ An airport is a facility where passenger connect from ground transportation to air transportation.

→ Airfield :-

Airfield is an area where an aircraft can land and takeoff which is equipped with any navigational aids, marking and terminal facilities

→ Aerodromes :-

Aerodromes is a defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of air craft.

Components of Airport :-

1. Runway.
2. Taxiway.
3. Apron.
4. Terminal building.
5. Control tower.
6. Hanger.
7. Parking.

Run way :-

Runway is a paved land strip on which landing and take place.

Taxi way :-

Taxiway is path which connects each end of the runway with terminal area, apron, hanger etc.

Apron :-

Apron is a place which is used as parking place for aircrafts. It is also used for loading and unloading of air craft.

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Terminal Building :-

Terminal building is a place where airport administration facilities take place. In this building Pre-Journey and Post Journey checkings of passenger take place.

Control Tower :-

The control tower is a place where aircraft under a particular zone is controlled whether they are in land or in air. The observation is done by the Controller through radars and information is carried through radio.

Parking :-

This is a place provided for Parking the vehicle of airport staffs or passenger which is outside the terminal building or sometimes under the ground of terminal building.