RRB JE exam 2019 Civil Engineering Book

As per Latest Syllabus

Contents:

Civil Engineering MCQs
General Science MCQs
General Mathematics MCQs
General Awareness MCQs

Total : 15000 Imp MCQs
RRB JE exam 2019 Civil Engineering MCQs

As per Latest Syllabus
Concrete Technology

RRB JE Syllabus:
Properties of various types/grades of cement, properties of coarse and fine aggregates, properties of concrete (water cement ratio, properties of fresh and hardened concrete), Concrete mix design, testing of concrete, quality control of concrete (batching, formwork, transportation, placing, compaction, curing, waterproofing), extreme weather concreting and chemical admixtures, properties of special concrete (ready mix, RCC, pre-stressed, fiber reinforced, precast, high performance).

**Question:** The temperature reinforcement in the vertical slab of a T-shaped R.C. retaining wall is

A) Not needed
B) Provided equally on inner and front faces
C) Provided more on inner face than on front face
D) Provided more on front face than on inner face

**Correct Option: D**

**Question:** Bulking of sand is maximum if moisture content is about

A) 0.02
B) 0.04
C) 0.06
D) 0.1

**Correct Option: B**

**Question:** Diagonal tension in a beam

A) Is maximum at neutral axis
B) Decreases below the neutral axis and increases above the neutral axis
C) Increases below the neutral axis and decreases above the neutral axis
D) Remains same

**Correct Option: C**

**Question:** According to IS: 4561978, the column or the strut is the member whose effective length is greater than

A) The least lateral dimension
B) 2 times the least lateral dimension
C) 3 times the least lateral dimension
Question: When shear stress exceeds the permissible limit in a slab, then it is reduced by
A) Increasing the depth
B) Providing shear reinforcement
C) Using high strength steel
D) Using thinner bars but more in number
Correct Option: A

Question: The diameter of ties in a column should be
A) More than or equal to one fourth of diameter of main bar
B) More than or equal to 5 mm
C) More than 5 mm but less than one-fourth of diameter of main bar
D) More than 5 mm and also more than one-fourth of diameter of main bar
Correct Option: D

Question: In counterfort retaining walls, the main reinforcement in the stem at support is
A) Not provided
B) Provided only on inner face
C) Provided only on front face
D) Provided both on inner and front faces
Correct Option: B

Question: Due to shrinkage stresses, a simply supported beam having reinforcement only at bottom tends to
A) Deflect downward
B) Deflect upward
C) Deflect downward or upward
D) None of the above
Correct Option: A

Question: The purpose of reinforcement in pre-stressed concrete is
A) To provide adequate bond stress
B) To resist tensile stresses
C) To impart initial compressive stress in concrete
D) All of the above

Correct Option: C

Question: Select the correct statement
A) Elastic modulus of high tensile steel is nearly the same as that of mild steel
B) Elastic modulus of high tensile steel is more than that of mild steel
C) Carbon percentage in high carbon steel is less than that in mild steel
D) High tensile steel is cheaper than mild steel

Correct Option: A

Question: To minimise the effect of differential settlement, the area of a footing should be designed for
A) Dead load only
B) Dead load + live load
C) Dead load + fraction of live load
D) Live load + fraction of dead load

Correct Option: C

Question: Due to circumferential action of the spiral in a spirally reinforced column
A) Capacity of column is decreased
B) Ductility of column reduces
C) Capacity of column is decreased but ductility of column increases
D) Both the capacity of column and ductility of column increase

Correct Option: D

Question: For concreting of heavily reinforced sections without vibration, the workability of concrete expressed as compacting factor should be
A) 0.75 - 0.80
B) 0.80 - 0.85
C) 0.85 - 0.92
D) Above 0.92
Correct Option: D
Question: Workability of concrete is directly proportional to
A) Aggregate cement ratio
B) Time of transit
C) Grading of the aggregate
D) All of above

Correct Option: C
Question: Which of the following statements is incorrect?
A) Minimum cross sectional area of longitudinal reinforcement in a column is 0.8%
B) Spacing of longitudinal bars measured along the periphery of column should not exceed 300 mm
C) Reinforcing bars in a column should not be less than 12 mm in diameter
D) The number of longitudinal bars provided in a circular column should not be less than four

Correct Option: D
Question: Critical section for shear in case of flat slabs is at a distance of
A) Effective depth of slab from periphery of column/drop panel
B) d/2 from periphery of column/capital/ drop panel
C) At the drop panel of slab
D) At the periphery of column

Correct Option: B
Question: For road pavements, the cement generally used, is
A) Ordinary Portland cement
B) Rapid hardening cement
C) Low heat cement
D) Blast furnace slag cement

Correct Option: B
Question: Pick up the incorrect statement from the following:
A) Space between the exterior walls of a warehouse and bag piles should be 30 cm
B) Cement bags should preferably be piled on wooden planks
C) Width and height of the pile should not exceed 3 m and 2.70 m respectively
Correct Option: D
Question: For a slab supported on its four edges with corners held down and loaded uniformly, the Marcus correction factor to the moments obtained by Grashoff Rankine's theory
A) Is always less than 1
B) Is always greater than 1
C) Can be more than 1
D) Can be less than 1
Correct Option: A

Question: Addition of pozzolana to ordinary port land cement, causes
A) Decrease in early strength
B) Reduction in chemical action with sulphates
C) Increase in shrinkage
D) All the above
Correct Option: D

Question: Pick up the correct statement from the following:
A) The maximum size of a coarse aggregate, is 75 mm and minimum 4.75 mm
B) The maximum size of the fine aggregate, is 4.75 mm and minimum 0.075 mm
C) The material having particles of size varying from 0.06 mm to 0.002 mm, is known as silt
D) All the above
Correct Option: D

Question: In a counterfort retaining wall, the main reinforcement is provided on the
(i) Bottom face in front counterfort
(ii) Inclined face in front counterfort
(iii) Bottom face in back counterfort
(iv) Inclined face in back counterfort
The correct answer is
A) (i) and (ii)
B) (ii) and (iii)
C) (i) and (iv)
D) (iii) and (iv)
Correct Option: C

Question: For construction of structures in sea water, the cement generally preferred to, is

A) Portland-pozzolana cement
B) Quick setting cement
C) Low heat Portland cement
D) Rapid hardening cement

Correct Option: A

Question: Curing of pavements, floors, roofs and slabs, is done by

A) Membrane method
B) Ponding method
C) Covering surface with bags
D) Sprinkling water method

Correct Option: B

Question: The centroid of compressive force, from the extreme compression fiber, in limit state design lies at a distance of
Where xu is the depth of neutral axis at the limit state of collapse

A) 0.367 xu
B) 0.416 xu
C) 0.446 xu
D) 0.573 xu

Correct Option: B

Question: Pick up the correct statement from the following:

A) Construction joints are necessarily planned for their locations
B) Expansion joints are provided to accommodate thermal expansion
C) Construction joints are provided to control shrinkage cracks
D) All the above

Correct Option: D

Question: The bulk density of aggregates, depends upon

A) Shape
B) Grading
C) Compaction
D) All the above

Correct Option: D

Question: In symmetrically reinforced sections, shrinkage stresses in concrete and steel are respectively
A) Compressive and tensile
B) Tensile and compressive
C) Both compressive
D) Both tensile

Correct Option: B

Question: The main object of compaction of concrete, is:
A) To eliminate air holes
B) To achieve maximum density
C) To provide intimate contact between the concrete and embedded materials
D) All the above

Correct Option: D

Question: Which of the following has high tensile strength?
A) Plain hot rolled wires
B) Cold drawn wires
C) Heat treated rolled wires
D) All have same tensile strength

Correct Option: B

Question: Pick up the incorrect statement from the following:
A) The degree of grinding of cement, is called fineness
B) The process of changing cement paste into hard mass, is known as setting of cement
C) The phenomenon by virtue of which cement does not allow transmission of sound, is known as soundness of cement
D) The heat generated during chemical reaction of cement with water, is known as heat of hydration

Correct Option: C

Question: Concrete gains strength due to
A) Chemical reaction of cement with sand and coarse aggregates

B) Evaporation of water from concrete

C) Hydration of cement

D) All the above

Correct Option: C

Question: To determine the modulus of rupture, the size of test specimen used is
A) 150 × 150 × 500 mm
B) 100 × 100 × 700 mm
C) 150 × 150 × 700 mm
D) 100 × 100 × 500 mm

Correct Option: C

Question: Tricalcium aluminate (C3A)
A) Reacts fast with water
B) Generates less heat of hydration
C) Causes initial setting and early strength of cement
D) Does not contribute to develop ultimate strength

Correct Option: B

Question: If the various concrete ingredients i.e. cement, sand and aggregates are in the ratio of 1:3:6, the grade of concrete is
A) M 100
B) M 150
C) M 200
D) M 250

Correct Option: A

Question: Admixtures which cause early setting and hardening of concrete are called
A) Workability admixtures
B) Accelerators
C) Retarders
D) Air entraining agents

**Correct Option: B**

**Question:** Pick up the correct statement from the following:
A) Sand stones may be divided into calcareous, siliceous and ferruginous sand stones
B) Concrete using sand stones, cracks due to excessive shrinkage
C) Broken bricks produce a concrete having good fire resisting qualities
D) All the above

**Correct Option: D**

**Question:** Pick up the incorrect statement from the following:
A) Admixtures accelerate hydration
B) Admixtures make concrete water proof
C) Admixtures make concrete acid proof
D) Admixtures give high strength

**Correct Option: A**

**Question:** For a reinforced concrete section, the shape of shear stress diagram is
A) Wholly parabolic
B) Wholly rectangular
C) Parabolic above neutral axis and rectangular below neutral axis
D) Rectangular above neutral axis and parabolic below neutral axis

**Correct Option: C**

**Question:** Allowable shear strength of concrete, depends upon
A) Shear strength
B) Tensile strength
C) Compressive strength
D) None of these

**Correct Option: A**

**Question:** In slump test, each layer of concrete is compacted by a steel rod 60 cm long and of 16 mm diameter for
A) 20 times
RRB JE exam 2019 General Science MCQs

As per Latest Syllabus
Physics

Question No. 01
A pond of clear water appears less deep than it really is. This is due to
   (A) Refraction  
   (B) Reflection  
   (C) The transparency of water  
   (D) Dispersion  
   Answer: Option A

Question No. 02
Stars appears to move from east to west because
   (A) All stars move from east to west  
   (B) The earth rotates from west to east  
   (C) The earth rotates from east to west  
   (D) The background of the stars moves from west to east  
   Answer: Option B

Question No. 03
Convex lenses are used for the correction of
   (A) Long-Sightedness  
   (B) Short-Sightedness  
   (C) Cataract  
   (D) None of these  
   Answer: Option A

Question No. 04
Red light is used in traffic signals because
   (A) It has the longest wavelength  
   (B) It is beautiful  
   (C) It is visible to people even with bad eyesight  
   (D) None of these  
   Answer: Option A

Question No. 05
Pencil “lead” is made up of
   (A) Graphite  
   (B) Charcoal  
   (C) Lead oxide  
   (D) Lampblack  
   Answer: Option A
Question No. 06
Solar Cell converts
(A) Light energy into heat energy
(B) Solar energy into electrical energy
(C) Solar energy into sound energy
(D) Solar energy into heat energy
Answer: Option B

Question No. 07
The image formed on the retina of the eye is
(A) Real and Inverted
(B) Upright and Real
(C) Virtual and Upright
(D) Enlarged and Real
Answer: Option A

Question No. 08
The blue colour of the water in the sea is due to
(A) Refraction of the blue light by the impurities in sea water
(B) Reflection of blue sky by the sea water
(C) Absorption of other colours except the blue colour by water molecules
(D) Scattering of blue light by water molecules
Answer: Option B

Question No. 09
Rainbow is due to
(A) Absorption of sunlight in minute water droplets
(B) Diffusion of sunlight through water droplets
(C) Ionisation of water deposits
(D) Refraction and reflection of sunlight by water droplets
Answer: Option D

Question No. 10
The oil in the wick of a lamp rises up due to
(A) Pressure difference
(B) Low viscosity of oil
(C) Capillary action
(D) Gravitational force
Answer: Option C

Question No. 11
Food is cooked in a pressure cooker quickly because
(A) Boiling point of water decreases
(B) Boiling point of water increases
(C) It absorbs heat quickly
(D) It retains heat for a longer duration  
Answer: Option B

Question No. 12
A glass tumbler containing ice shows droplets of water on the outer surface because
(A) The outer surface of the tumbler shows hygroscopic effect
(B) The moisture in the air on coming in contact with the cold surface of the tumbler condenses in the form of droplets of water
(C) Water from inside oozes out through minute porous wall of the tumbler
(D) Both (A) and (C)
Answer: Option B

Question No. 13
The sky appears blue because
(A) It is actually blue
(B) The atmosphere scatters blue light more than the others
(C) All colours interface to produce blue
(D) In white light, blue colour dominates
Answer: Option B

Question No. 14
A thick glass tumbler cracks more easily than a thin one when hot water is poured into it. Why?
(A) Thick glass is more brittle than thin glass.
(B) Thick glass is of inferior quality.
(C) The inner surface of the tumbler expands more than its outer surface.
(D) The outer surface of the tumbler expands more than its inner surface.
Answer: Option C

Question No. 15
Let a thin capillary tube be replaced with another tube of insufficient length then, we find water
(A) Will overflow
(B) Will not rise
(C) Depressed
(D) Change its meniscus
Answer: Option B

Question No. 16
Rectifiers are used to convert
(A) Direct current to Alternating current
(B) Alternating current to Direct current
(C) High voltage to low voltage
(D) Low voltage to high voltage
Answer: Option B
Question No. 17
Magnetism at the centre of a bar magnet is
(A) Minimum
(B) Maximum
(C) Zero
(D) Minimum or maximum
Answer: Option C

Question No. 18
Point ‘A’ is at a lower electrical potential than point ‘B’. An electron between them on the line joining them will
(A) Move towards A
(B) Move towards B
(C) Move at right angles to the line joining A and B
(D) Remain at rest
Answer: Option B

Question No. 19
It takes much longer to cook food in the hills than in the plains, because
(A) In the hills the atmospheric pressure is lower than that in the plains and therefore water boils at a temperature lower than 100°C causing an increase in cooking time
(B) Due to low atmospheric pressure on the hills, the water boils at a temperature higher than 100°C and therefore water takes longer to boil
(C) In the hills the atmospheric density is low and therefore a lot of heat is lost to the atmosphere
(D) In the hills the humidity is high and therefore a lot of heat is absorbed by the atmosphere leaving very little heat for cooking
Answer: Option A

Question No. 20
Oil raise up the wick in a lamp. The principle involves
(A) The diffusion of oil through the wick
(B) The liquid state of oil
(C) Capillary action phenomenon
(D) Volatility of oil
Answer: Option C

Question No. 21
Intensity of sound at a point is __________ its distance from the source.
(A) Directly proportional to
(B) Inversely proportional to
(C) Directly proportional to square of
(D) Inversely proportional to square of
Answer: Option D
Question No. 22
Out of the following pairs, which one does not have identical dimension?
(A) Moment of inertia and moment of a force
(B) Work and Torque
(C) Angular momentum and Planck's constant
(D) Impulse and Momentum
Answer: Option A

Question No. 23
On a stationary sail boat, air is blown from a fan attached to the boat. The boat
(A) Moves in opposite direction in which the air is blown
(B) Does not move
(C) Moves in the same direction in which air blows
(D) Spins around
Answer: Option B

Question No. 24
Isotopes of an element contain
(A) The same number of protons but different number of neutrons
(B) The same number of neutrons but different number of protons
(C) Equal number of protons and electrons
(D) Equal number of nucleons
Answer: Option A

Question No. 25
Identify the vector quantity from the following
(A) Heat
(B) Angular momentum
(C) Time
(D) Work
Answer: Option B

Question No. 26
An aeroplane is flying horizontally with a velocity of 600 km/h and at a height of 1960 m. When it
is vertically at a point ‘A’ on the ground a bomb is released from it. The bomb strikes the ground at
point ‘B’. The distance ‘AB’ is
(A) 1200 m
(B) 0.33 km
(C) 3.33 km
(D) 33 km
Answer: Option C

Question No. 27
Photosynthesis takes place faster in
(A) Yellow light
(B) White light
(C) Red light
(D) Darkness
Answer: Option B

Question No. 28
It is more difficult to walk on a sandy road than on a concrete road because
(A) Sand is soft and concrete is hard
(B) The friction between sand and feet is less than that between concrete and feet
(C) The friction between sand and feet is more than that between concrete and feet
(D) The sand is grainy but concrete is smooth
Answer: Option B

Question No. 29
Radiocarbon is produced in the atmosphere as a result of
(A) Collision between fast neutrons and nitrogen nuclei present in the atmosphere
(B) Action of ultraviolet light from the sun on atmospheric oxygen
(C) Action of solar radiations particularly cosmic rays on carbon dioxide present in the atmosphere
(D) Lightning discharge in atmosphere
Answer: Option A

Question No. 30
Large transformers, when used for some time, become very hot and are cooled by circulating oil.
The heating of the transformer is due to
(A) The heating effect of current alone
(B) Hysteresis loss alone
(C) Both the heating effect of current and hysteresis loss
(D) Intense sunlight at noon
Answer: Option C

Question No. 31
Study of life in outer space is known as
(A) Endobiology
(B) Exobiology
(C) Entrobiology
(D) Neobiology
Answer: Option B

Question No. 32
If two bodies of different masses, initially at rest, are acted upon by the same force for the same time, then the both bodies acquire the same
(A) Velocity
(B) Momentum
(C) Acceleration
(D) Kinetic energy  
Answer: Option B

**Question No. 33**  
Of the following properties of a wave, the one that is independent of the other is its  
(A) Amplitude  
(B) Velocity  
(C) Wavelength  
(D) Frequency  
Answer: Option A

**Question No. 34**  
RADAR is used for  
(A) Locating submerged submarines  
(B) Receiving a signals in a radio receiver  
(C) Locating geostationary satellites  
(D) Detecting and locating the position of objects such as aeroplanes  
Answer: Option D

**Question No. 35**  
Stars twinkle because  
(A) The intensity of light emitted by them changes with time  
(B) The distance of the stars from the earth changes with time  
(C) The refractive index of the different layers of the earth's atmosphere changes continuously, consequently the position of the image of a start changes with time  
(D) The light from the star is scattered by the dust particles and air molecules in the earth's atmosphere  
Answer: Option C

**Question No. 36**  
Sound travels with a different speed in media. In what order does the velocity of sound increase in these media?  
(A) Water, iron and air  
(B) Iron, air and water  
(C) Air, water and iron  
(D) Iron, water and air  
Answer: Option C

**Question No. 37**  
Light travels at the fastest speed in  
(A) Glass  
(B) Water  
(C) Hydrogen  
(D) Vacuum  
Answer: Option D
Question No. 38
Light Emitting Diodes (LED) is used in fancy electronic devices such as toys emit
(A) X-rays
(B) Ultraviolet light
(C) Visible light
(D) Radio waves
Answer: Option C

Question No. 39
Supersonic plane fly with the speed
(A) Less than the speed of sound
(B) Of sound
(C) Greater than the speed of sound
(D) Of light
Answer: Option C

Question No. 40
Primary rainbow is formed when light suffers
(A) Two internal refractions before emerging out of the drop
(B) One internal refractions before emerging out of the drop
(C) No internal refraction
(D) Either one or two internal refractions before emerging out of the drop
Answer: Option B

Question No. 41
Rainbow is produced when sunlight fall on drops of rain. Which of the following physical phenomena are responsible for this?
I. Diffusion
II. Refraction
III. Internal reflection
(A) I, II and III
(B) I and II
(C) II and III
(D) I and III
Answer: Option C

Question No. 42
Rain is falling vertically downwards. To a man running east-wards, the rain will appear to be coming from
(A) East
(B) West
(C) Northeast
(D) Southeast
Answer: Option A
Question No. 43

Planets are
(A) Luminous heavenly bodies revolving around a star
(B) Non-luminous heavenly bodies
(C) Luminous heavenly bodies that twinkle
(D) Luminous heavenly bodies that do not twinkle
Answer: Option B

Question No. 44

Intensity of sound has
(A) An object existence
(B) A subject existence
(C) No existence
(D) Both subjective and objective existence
Answer: Option A

Question No. 45

Metals are good conductors of electricity because
(A) They contain free electrons
(B) The atoms are lightly packed
(C) They have high melting point
(D) All of the above
Answer: Option A

Question No. 46

Find the maximum velocity for the overturn of a car moving on a circular track of radius 100 m.
The co-efficient of friction between the road and tyre is 0.2
(A) 0.14 m/s
(B) 140 m/s
(C) 1.4 km/s
(D) 14 m/s
Answer: Option D

Question No. 47

The ozone layer restricts
(A) Visible light
(B) Infrared radiation
(C) X-rays and gamma rays
(D) Ultraviolet radiation
Answer: Option D

Question No. 48

When a moving bus stops suddenly, the passenger are pushed forward because of the
(A) Friction between the earth and the bus
(B) Friction between the passengers and the earth
RRB JE exam 2019 General Maths MCQs

As per Latest Syllabus
1. A train is running at a speed of 40 km/hr and it crosses a post in 18 seconds. What is the length of the train?

A. 190 metres  
B. 160 metres  
C. 200 metres  
D. 120 metres

Here is the answer and explanation

Answer: Option C

Explanation:

Speed of the train, \( v = 40 \text{ km/hr} = \frac{40000}{3600} \text{ m/s} = \frac{400}{36} \text{ m/s} \)

Time taken to cross, \( t = 18 \text{ s} \)

Distance Covered, \( d = vt = \left(\frac{400}{36}\right) \times 18 = 200 \text{ m} \)

Distance covered is equal to the length of the train = 200 m

2. A train, 130 meters long travels at a speed of 45 km/hr crosses a bridge in 30 seconds. The length of the bridge is

A. 270 m  
B. 245 m  
C. 235 m  
D. 220 m

Here is the answer and explanation

Answer: Option B

Explanation:

Assume the length of the bridge = \( x \) meter

Total distance covered = 130+\( x \) meter

total time taken = 30s

speed = Total distance covered /total time taken = \( \frac{130+x}{30} \text{ m/s} \)

\[ \Rightarrow 45 \times \frac{10}{36} = \frac{130+x}{30} \]

\[ \Rightarrow 45 \times 10 \times 30 /36 = 130+x \]

\[ \Rightarrow 45 \times 10 \times 10 / 12 = 130+x \]

\[ \Rightarrow 15 \times 10 \times 10 / 4 = 130+x \]

\[ \Rightarrow 15 \times 25 = 130+x = 375 \]

\[ \Rightarrow x = 375-130 =245 \]
3. A train has a length of 150 meters. It is passing a man who is moving at 2 km/hr in the same direction of the train, in 3 seconds. Find out the speed of the train.

A. 182 km/hr  
B. 180 km/hr  
C. 152 km/hr  
D. 169 km/hr

Here is the answer and explanation

Answer: Option A

Explanation:
Length of the train, \( l = 150 \) m

Speed of the man, \( V_m = 2 \) km/hr

Relative speed, \( V_r = \frac{\text{total distance}}{\text{time}} = \frac{150}{3} \) m/s = \( \frac{150}{3} \times \frac{18}{5} = 180 \) km/hr

Relative Speed = Speed of train, \( V_t - \) Speed of man (As both are moving in the same direction)

\[ \Rightarrow 180 = V_t - 2 \]

\[ \Rightarrow V_t = 180 + 2 = 182 \text{ km/hr} \]

4. A train having a length of 240 m passes a post in 24 seconds. How long will it take to pass a platform having a length of 650 m?

A. 120 sec  
B. 99 s  
C. 89 s  
D. 80 s

Here is the answer and explanation

Answer: Option C

Explanation:
\[ v = \frac{240}{24} \text{ (where } v \text{ is the speed of the train) } = 10 \text{ m/s} \]

\[ t = \frac{240+650}{10} = 89 \text{ seconds} \]

5. A train 360 m long runs with a speed of 45 km/hr. What time will it take to pass a platform of 140 m long?

A. 38 sec  
B. 35 s  
C. 44 sec  
D. 40 s

Here is the answer and explanation

Answer: Option C

Explanation:
\[ v = \frac{360+140}{10} \text{ (where } v \text{ is the speed of the train) } = 40 \text{ m/s} \]

\[ t = \frac{360}{40} = 9 \text{ seconds} \]
Here is the answer and explanation
Answer : Option D
Explanation :

Speed = 45 km/hr = 45×(10/36) m/s
= 150/12 = 50/4 = 25/2 m/s

Total distance = length of the train + length of the platform
= 360 + 140 = 500 meter

Time taken to cross the platform = 500/(25/2) = 500×2/25 = 40 seconds

6. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively. If they cross each other in 23 seconds, what is the ratio of their speeds?
A. Insufficient data  
B. 3 : 1  
C. 1 : 3  
D. 3 : 2

Here is the answer and explanation
Answer : Option D
Explanation :

Let the speed of the trains be x and y respectively

length of train1 = 27x

length of train2 = 17y

Relative speed= x+ y

Time taken to cross each other = 23 s

=> (27x + 17 y)/(x+y) = 23

=> (27x + 17 y)/ = 23(x+y)

=> 4x = 6y

=> x/y = 6/4 = 3/2

7. A jogger is running at 9 kmph alongside a railway track in 240 meters ahead of the engine of a 120 meters long train. The train is running at 45 kmph in the same direction. How much time does it take for the train to pass the jogger?
A. 46  
B. 36  
C. 18  
D. 22
8. Two trains of equal length are running on parallel lines in the same direction at 46 km/hr and 36 km/hr. If the faster train passes the slower train in 36 seconds, what is the length of each train?
A. 88
B. 70
C. 62
D. 50

Answer : Option D
Explanation :
Assume the length of each train = x
Total distance covered for overtaking the slower train = x+x = 2x
Relative speed = 46-36 = 10km/hr = (10×10)/36 = 100/36 m/s
Time = 36 seconds
2x/(100/36) = 36
=> (2x × 36)/100 = 36
=> x = 50 meter

9. Two trains having length of 140 m and 160 m long run at the speed of 60 km/hr and 40 km/hr respectively in opposite directions (on parallel tracks). The time which they take to cross each other, is
A. 10.8 s
B. 12 s
C. 9.8 s
D. 8 s

Answer : Option A
Explanation :
Distance = 140 + 160 = 300 m

Relative speed = 60 + 40 = 100 km/hr = (100 × 10)/36 m/s

Time = distance/speed = 300 / (100 × 10)/36 = 300 × 36 / 1000 = 3 × 36/10 = 10.8 s

10. Two trains are moving in opposite directions with speed of 60 km/hr and 90 km/hr respectively. Their lengths are 1.10 km and 0.9 km respectively. the slower train cross the faster train in —— seconds

A. 56
B. 48
C. 47
D. 26

Here is the answer and explanation

Answer : Option B

Explanation :
Relative speed = 60 + 90 = 150 km/hr (Since both trains are moving in opposite directions)

Total distance = 1.1 + 0.9 = 2 km

Time = 2/150 hr = 1/75 hr = 3600/75 seconds = 1200/25 = 240/5 = 48 seconds

11. A train passes a platform in 36 seconds. The same train passes a man standing on the platform in 20 seconds. If the speed of the train is 54 km/hr, The length of the platform is

A. None of these
B. 280 meter
C. 240 meter
D. 200 meter

Here is the answer and explanation

Answer : Option C

Explanation :
Speed of the train = 54 km/hr = (54 × 10)/36 m/s = 15 m/s

Length of the train = speed × time taken to cross the man = 15 × 20 = 300 m

Let the length of the platform = L

Time taken to cross the platform = (300 + L)/15

=> (300 + L)/15 = 36

=> 300 + L = 15 × 36 = 540

=> L = 540 - 300 = 240 meter
12. A train moves past a post and a platform 264 m long in 8 seconds and 20 seconds respectively. What is the speed of the train?
A. 79.2 km/hr 
B. 69 km/hr 
C. 74 km/hr 
D. 61 km/hr

Here is the answer and explanation

Answer : Option A

Explanation :
Let x is the length of the train and v is the speed

Time taken to move the post = 8 s

=> x/v = 8

=> x = 8v --- (1)

Time taken to cross the platform 264 m long = 20 s

(x+264)/v = 20

=> x + 264 = 20v ---(2)

Substituting equation 1 in equation 2, we get

8v +264 = 20v

=> v = 264/12 = 22 m/s

= 22×36/10 km/hr = 79.2 km/hr

13. Two trains having equal lengths, take 10 seconds and 15 seconds respectively to cross a post. If the length of each train is 120 meters, in what time (in seconds) will they cross each other when traveling in opposite direction?
A. 10  
B. 25  
C. 12  
D. 20

Here is the answer and explanation

Answer : Option C

Explanation :

speed of train1 = 120/10 = 12 m/s
speed of train 2 = 120/15 = 8 m/s
if they travel in opposite direction, relative speed = 12 + 8 = 20 m/s
distance covered = 120 + 120 = 240 m
time = distance/speed = 240/20 = 12 s

14. Two trains, one from P to Q and the other from Q to P, start simultaneously. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is
A. 2 : 3  
B. 2 : 1  
C. 4 : 3  
D. 3 : 2

Here is the answer and explanation
Answer : Option C
Explanation :
Ratio of their speeds = Speed of first train : Speed of second train
\[
\frac{\sqrt{16}}{\sqrt{9}} = 4:3
\]

15. A train having a length of 1/4 mile, is traveling at a speed of 75 mph. It enters a tunnel 3 1/2 miles long. How long does it take the train to pass through the tunnel from the moment the front enters to the moment the rear emerges?
A. 3 min  
B. 4.2 min  
C. 3.4 min  
D. 5.5 min

Here is the answer and explanation
Answer : Option A
Explanation :
Total distance = 3 1/2 + 1/4 = 7/2 + 1/4 = 15/4 miles
Speed = 75 mph
Time = distance/speed = (15/4) / 75 hr = 1/20 hr = 60/20 minutes = 3 minutes

16. A train runs at the speed of 72 kmph and crosses a 250 m long platform in 26 seconds. What is
the length of the train?
A. 270 m  
B. 210 m  
C. 340 m  
D. 130 m

Here is the answer and explanation

Answer : Option A

Explanation :

Speed= 72 kmph = $72 \times \frac{10}{36} = 20 \text{ m/s}$

Distance covered = $250 + x$ where $x$ is the length of the train

Time = 26 s

$\frac{250+x}{26} = 20$

$250+x = 26 \times 20 = 520 \text{ m}$

$x = 520 - 250 = 270 \text{ m}$

17. A train overtakes two persons who are walking in the same direction to that of the train at 2 kmph and 4 kmph and passes them completely in 9 and 10 seconds respectively. What is the length of the train?
A. 62 m  
B. 54 m  
C. 50 m  
D. 55 m

Here is the answer and explanation

Answer : Option C

Explanation :

Let $x$ is the length of the train in meter and $v$ is its speed in kmph

$x/9 = (v-2)(10/36) \quad \text{---(1)}$

$x/10 = (v-4) (10/36) \quad \text{--- (2)}$

Dividing equation 1 with equation 2

$\frac{10}{9} = \frac{(v-2)}{(v-4)}$

$\Rightarrow 10v - 40 = 9v - 18$

$\Rightarrow v = 22$

Substituting in equation 1, $x/9 = 200/36 \Rightarrow x = 9 \times 200/36 = 50 \text{ m}$
18. A train is traveling at 48 kmph. It crosses another train having half of its length, traveling in opposite direction at 42 kmph, in 12 seconds. It also passes a railway platform in 45 seconds. What is the length of the platform?
A. 500 m  
B. 360 m  
C. 480 m  
D. 400 m

Here is the answer and explanation
Answer: Option D
Explanation:
Speed of train1 = 48 kmph
Let the length of train1 = 2x meter
Speed of train2 = 42 kmph
Length of train 2 = x meter (because it is half of train1's length)
Distance = 2x + x = 3x
Relative speed= 48+42 = 90 kmph = 90x10/36 m/s = 25 m/s
Time = 12 s
Distance/time = speed => 3x/12 = 25
=> x = 25x12/3 = 100 meter
Length of the first train = 2x = 200 meter

Time taken to cross the platform = 45 s
Speed of train1 = 48 kmph = 480/36 = 40/3 m/s
Distance = 200 + y where y is the length of the platform
=> 200 + y = 45x40/3 = 600
=> y = 400 meter

19. A train having a length of 270 meter is running at the speed of 120 kmph. It crosses another train running in opposite direction at the speed of 80 kmph in 9 seconds. What is the length of the other train?
A. 320 m  
B. 190 m  
C. 210 m  
D. 230 m

Answer: Option C
Explanation:
Speed of train1 = 120 kmph
Speed of train2 = 80 kmph
Relative speed = 120+80 = 200 kmph = 200x10/36 m/s = 55.56 m/s
Time = 9 s
Distance/time = speed => 200×9/36 = 55 m
Distance = 270 + x where x is the length of the other train
=> 270 + x = 55
=> x = 215 meter
=> y = 210 meter
20. Two trains, each 100 m long are moving in opposite directions. They cross each other in 8 seconds. If one is moving twice as fast the other, the speed of the faster train is

A. 75 km/hr  
B. 60 km/hr  
C. 35 km/hr  
D. 70 km/hr

Answer: Option B

Explanation:
Total distance covered = 100 + 100 = 200 m
Time = 8 s

Let speed of slower train is \( v \). Then the speed of the faster train is \( 2v \)
(Since one is moving twice as fast the other)

Relative speed = \( v + 2v = 3v \)

\[ 3v = \frac{200}{8} \text{ m/s} = 25 \text{ m/s} \]

\[ \Rightarrow v = \frac{25}{3} \text{ m/s} \]

Speed of the faster train = \( 2v = \frac{50}{3} \text{ m/s} = \left(\frac{50}{3}\right) \times \left(\frac{36}{10}\right) \text{ km/hr} = \frac{5 \times 36}{3} = \frac{5 \times 12}{1} = 60 \text{ km/hr} \]

21. Two stations P and Q are 110 km apart on a straight track. One train starts from P at 7 a.m. and travels towards Q at 20 kmph. Another train starts from Q at 8 a.m. and travels towards P at a speed of 25 kmph. At what time will they meet?

A. 10.30 a.m  
B. 10 a.m.
C. 9.10 a.m.  
D. 11 a.m.

Here is the answer and explanation

Answer : Option B

Explanation :
Assume both trains meet after x hours after 7 am

Distance covered by train starting from P in x hours = 20x km

Distance covered by train starting from Q in (x-1) hours = 25(x-1)

Total distance = 110

=> 20x + 25(x-1) = 110

=> 45x = 135

=> x= 3

Means, they meet after 3 hours after 7 am, ie, they meet at 10 am

22. A train overtakes two persons walking along a railway track. The first person walks at 4.5 km/hr and the other walks at 5.4 km/hr. The train needs 8.4 and 8.5 seconds respectively to overtake them. What is the speed of the train if both the persons are walking in the same direction as the train?

A. 81 km/hr  
B. 88 km/hr  
C. 62 km/hr  
D. 46 km/hr

Here is the answer and explanation

Answer : Option A

Explanation :
Let x is the length of the train in meter and y is its speed in kmph

\[
x/8.4 = (y-4.5)(10/36) \quad \text{---(1)}
\]

\[
x/8.5 = (y-5.4)(10/36) \quad \text{---(2)}
\]

Dividing 1 by 2

\[
8.5/8.4 = (y-4.5)/ (y-5.4)
\]

=> 8.4y - 8.4 × 4.5 = 8.5y - 8.5×5.4

.1y = 8.5×5.4 - 8.4×4.5

=> .1y = 45.9-37.8 = 8.1
23. A train, having a length of 110 meter is running at a speed of 60 kmph. In what time, it will pass a man who is running at 6 kmph in the direction opposite to that of the train

A. 10 sec  
B. 8 sec  
C. 6 sec  
D. 4 sec

Here is the answer and explanation

Answer: Option C

Explanation:

Distance = 110 m

Relative speed = 60+6 = 66 kmph (Since both the train and the man are in moving in opposite direction)

= 66×10/36 mps = 110/6 mps

Time = distance/speed = 110/(110/6) = 6 s

24. A 300 metre long train crosses a platform in 39 seconds while it crosses a post in 18 seconds. What is the length of the platform?

A. 150 m  
B. 350 m  
C. 420 m  
D. 600 m

Here is the answer and explanation

Answer: Option B

Explanation:

Length of the train = distance covered in crossing the post = speed × time = speed × 18

Speed of the train = 300/18 m/s = 50/3 m/s

Time taken to cross the platform = 39 s

(300+x)/(50/3) = 39 s where x is the length of the platform

300+x = (39 × 50) / 3 = 650 meter

x = 650-300 = 350 meter
25. A train crosses a post in 15 seconds and a platform 100 m long in 25 seconds. Its length is
A. 150 m  B. 300 m  C. 400 m  D. 180 m

Here is the answer and explanation
Answer: Option A
Explanation:
Assume x is the length of the train and v is the speed
\[ x/v = 15 \Rightarrow v = x/15 \]
\[ (x+100)/v = 25 \Rightarrow v = (x+100)/25 \]
Ie, \[ x/15 = (x+100)/25 \]
\[ => 5x = 3x+ 300 \]
\[ => x = 300/2 = 150 \]

26. A train, 800 meter long is running with a speed of 78 km/hr. It crosses a tunnel in 1 minute. What is the length of the tunnel (in meters)?
A. 440 m  B. 500 m  C. 260 m  D. 430 m

Here is the answer and explanation
Answer: Option B
Explanation:
Distance = 800 + x meter where x is the length of the tunnel
Time = 1 minute = 60 seconds
Speed = 78 km/hr = 78 \times \frac{10}{36} m/s = \frac{130}{6} = \frac{65}{3} m/s
Distance/time = speed
\[ (800+x)/60 = \frac{65}{3} \]
\[ => 800+x = 20 \times 65 = 1300 \]
\[ => x = 1300 - 800 = 500 \text{ meter} \]

27. Two train each 500 m long, are running in opposite directions on parallel tracks. If their speeds
are 45 km/hr and 30 km/hr respectively, the time taken by the slower train to pass the driver of the faster one is

A. 50 sec  B. 58 sec  C. 24 sec  D. 22 sec

Here is the answer and explanation

Answer : Option C

Explanation :

Relative speed = 45+30 = 75 km/hr = 750/36 m/s = 125/6 m/s

We are calculating the time taken by the slower train to pass the driver of the faster one

Hence the distance = length of the smaller train = 500 m

Time = distance/speed = 500/(125/6) = 24 sec

28. Two trains are running at 40 km/hr and 20 km/hr respectively in the same direction. If the fast train completely passes a man sitting in the slower train in 5 seconds, the length of the fast train is :

A. 19 m  B. 27 \frac{7}{9} m  C. 13 \frac{2}{9} m  D. 33 m

Here is the answer and explanation

Answer : Option B

Explanation :

Relative speed = 40-20 = 20 km/hr = 200/36 m/s = 100/18 m/s

Time = 5 s

Distance = speed \times time = (100/18) \times 5 = 500/18 m = 250/9 = 27 \frac{7}{9} m = length of the fast train

29. Two trains are running in opposite directions in the same speed. The length of each train is 120 meter. If they cross each other in 12 seconds, the speed of each train (in km/hr) is

A. 42  B. 36  C. 28  D. 20

Here is the answer and explanation

Answer : Option B
Explanation:
Distance covered = 120 + 120 = 240 m

Time = 12 s

Let the speed of each train = v. Then relative speed = v + v = 2v

2v = distance/time = 240/12 = 20 m/s

Speed of each train = v = 20/2 = 10 m/s

= 10 × 36/10 km/hr = 36 km/hr

30. A train 108 m long is moving at a speed of 50 km/hr. It crosses a train 112 m long coming from opposite direction in 6 seconds. What is the speed of the second train?
A. 82 kmph       B. 76 kmph
C. 44 kmph       D. 58 kmph

Here is the answer and explanation
Answer: Option A

Explanation:
Total distance = 108 + 112 = 220 m

Time = 6 s

Relative speed = distance/time = 220/6 m/s = 110/3 m/s

= (110/3) × (18/5) km/hr = 132 km/hr

=> 50 + speed of second train = 132 km/hr

=> Speed of second train = 132 - 50 = 82 km/hr

31. How many seconds will a 500 meter long train moving with a speed of 63 km/hr, take to cross a man walking with a speed of 3 km/hr in the direction of the train?
A. 42           B. 50
C. 30           D. 28

Here is the answer and explanation
Answer: Option C

Explanation:
Distance = 500m
Speed = 63 -3 km/hr = 60 km/hr = 600/36 m/s = 50/3 m/s

Time taken = distance/speed = 500/(50/3) = 30 s
RRB JE exam 2019 General Awareness MCQs

As per Latest Syllabus
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>This state government introduces Bhodhar card for land holders.</td>
<td>A. Rajasthan  B. Punjab  C. Tamilnadu  D. Andhra Pradesh</td>
<td>Answer: Option D</td>
</tr>
<tr>
<td>Which Indian-origin personality has been appointed as the Chairman of the Geneva-based World Business Council for Sustainable Development (WBCSD)?</td>
<td>A. Bhupendra Kainthola  B. Sunny Verghese  C. Gurdip Singh  D. Sunil Chauhan</td>
<td>Answer: Option B</td>
</tr>
<tr>
<td>India's fastest and first multi-peta-flops supercomputer &quot;Pratyush&quot; has established at?</td>
<td>A. Indian Institute of Remote Sensing (IIRS) Dehradun  B. Central Institute of Technology (CIT) Kokrajhar  C. Indian Institute of Information Technology (IIIT) Gwalior  D. Indian Institute of Tropical Meteorology (IITM) Pune</td>
<td>Answer: Option D</td>
</tr>
<tr>
<td>How many percentage World Bank Projects Indias Growth Rate?</td>
<td>A. 7.3%  B. 9.8%  C. 8.5%  D. 6.5%</td>
<td>Answer: Option A</td>
</tr>
<tr>
<td>Which organisation Transparent and Efficient New Online Vendor Registration System?</td>
<td>A. Indian Airways  B. Indian Railways  C. Taxi Service  D. Indian Police</td>
<td>Answer: Option B</td>
</tr>
<tr>
<td>How many million cars on roads building HD maps this year?</td>
<td>A. 2  B. 4  C. 6  D. 10</td>
<td>Answer: Option A</td>
</tr>
<tr>
<td>Who Bags Bronze India’s 1st International Medal in Skiing?</td>
<td>A. Naresh iyer  B. Vijay Sekhar  C. Suresh narayan  D. Anchal Thakur</td>
<td>Answer: Option D</td>
</tr>
<tr>
<td>Who of the following will became the brand ambassador of Sikkim?</td>
<td>A. Mohanlal  B. Bhanu Athaiya  C. A R Rahman  D. K.J. Yesudas</td>
<td>Answer: Option C</td>
</tr>
</tbody>
</table>