



RVUNL AEN & JEN

Civil Engineering

Mini Mock Challenge
(May 22nd - May 23rd 2021)

Questions &
Solutions

1. **Direction:** In each of the questions below are given three statements followed by two conclusions numbered I & II. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements:

All glasses are pens.

No pen is chalk.

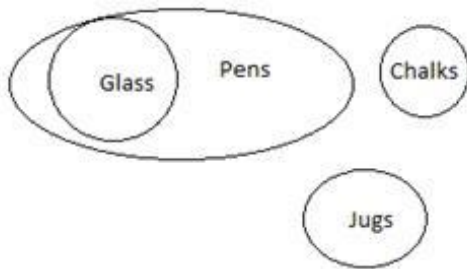
No chalk is jug.

Conclusions:

- I. No glass is chalk.
- II. No glass is jug.
- A. If only Conclusion I follows
- B. if only Conclusion II follows
- C. if either Conclusion I or II follows
- D. if neither Conclusion I nor II follows
- E. if both Conclusions I and II follow

Ans. A

Sol.



2. How many such pairs of letters are there in the word 'VIRTUAL', each of which has as many letters between them in the word (in both forward and backward directions) as they have between them in the English alphabetical series ?
- A. None
 - B. One
 - C. Two
 - D. Three
 - E. More than three

Ans. B

Sol. V I R T U A L
22 9 18 20 21 1 12
Only TU

Sol.

- Cuttak is located on the banks of the river **Mahanadi** in Odisha.
- Cuttack is also famous for its Durga Puja which is the most important festival of Odisha and West Bengal.
- Cuttack is also the birth-place of Netaji Subhas Chandra Bose. Cuttack and Bhubaneswar are often referred to as the Twin-Cities of Odisha.
- The **Mahanadi** is a major river in East Central India. It drains an area of around 141,600 square kilometres (54,700 sq mi) and has a total course of 858 kilometres (533 mi) Mahanadi is also known for the **Hirakud Dam**.

6. What is the capital of Bhutan?

- | | |
|------------|---------|
| A. Thimpu | B. Paro |
| C. Samtse | D. Daga |
| E. Chhukha | |

Ans. A

Sol. **Thimphu** is the capital and largest city of the Kingdom of Bhutan.

Ngultrum is the currency of **Bhutan**.

Some facts about Bhutan

1. Bhutan is a small country sandwiched between **India and Tibet**, just east of Nepal and north of Bangladesh.
2. **Bhutan** was the **last** country to allow **internet** and **TVs** in.
3. Bhutan is the only country in the world that is **Carbon-negative**, it produces less Carbon Dioxide than it absorbs.
4. Bhutan — means "**Land of the Thunder Dragon**." The dragon appears on the Bhutanese flag.
5. The national sport of Bhutan **is archery**.
6. In 2010, Bhutan became the first country in the world to ban the production and sales of tobacco products.

7. Pongal festival is celebrated in which of the following states of India?

- | | |
|------------------|----------------|
| A. Tamil Nadu | B. Maharashtra |
| C. Assam | D. Mizoram |
| E. Uttar pradesh | |

Ans. A

Sol. Pongal festival (four-day) is being celebrated in Tamil Nadu and the Indian Union Territory of Puducherry.

It marks the first day of the auspicious month in Tamil calendar, "Thai."

The day marks the start of the sun's six-month-long journey northwards (the Uttaraayanam).

12. Which is the STATE BIRD of Rajasthan?

- A. Godawan
- B. Peacock
- C. Dove
- D. Parrot

Ans. A

Sol. Government declare state bird (Godawan) in 1982. It is the rarest/ almost extinction bird of our country. It is called "GREAT INDIAN BUSTARD" and scientifically called *Choriotis nigriceps*.

Godawan eats "Taramira". Godawan found in Jaisalmer, Baran and Ajmer.

13. Nawalgarh(Sikar) was in news because of:

- A. Bumper crop of Kharif season, especially the production of millet
- B. The Govt. has taken responsibility to provide the land to cement manufacturer.
- C. geendad utsav has started in Shravan, so that tourists can be attracted.
- D. Government has approved a private university for this area

Ans. C

Sol. In the Nawalgarh, located in Sikar district of Rajasthan, the celebration of geendad has been started in the month of Shravan so that visitors can be attracted.

14. Raika's in rajasthan are:

- A. Traditional Hourse breeders
- B. Traditional Camel Breeders
- C. Used to sell goods from village to village
- D. Salt traders

Ans. B

Sol. In Rajasthan, Raikais a traditional camel farmer. It is found mainly in Rajasthan and Gujarat.

15. RIDCOR Stands for:

- A. Road Infrastructure Development Company of Rajasthan
- B. Railway Information Download Corporation of Rajasthan
- C. Rajasthan Indore Decoration Corporation of Railways
- D. Rail Infrastructure Development Corporation of Rajasthan

Ans. A

Sol. RIDCOR is the Road Infrastructure Development Company of Rajasthan.

16. Main function of colonisation in rajasthan is to:

- A. Provide residential plots
- B. Acquire land by govt.
- C. provide irrigation facility
- D. Allot land

Ans. D

Sol. The main work of colonization in Rajasthan is the allocation of land for small and medium irrigation projects.

17. With which of the following areas of Rajasthan the AlibakshiKhayal is associated?

- A. Karauli
- B. Chidawa
- C. Alwar
- D. Chittor

Ans. C

Sol. Khayal is a folk theatrical mode. Ali Bakshi Khayal is a special identity of Alwar district. Ali Bakshi composed Ali Bakshi Khayal. Ali Bakshi was the Nawab of Mandawar in Alwar district. In this Khayal, songs based on Krishna-Devotion are sung in a special way.

18. In which of the following are of Rajasthan, "GulabiGangaur" is celebrated on Chaitra Shukla Panchmi?

- A. Nathdwara
- B. Udaipur
- C. Bundi
- D. Jodhpur

Ans. A

Sol. In Nathdwara, Chaitra-Shukla Panchami 'Gulaabiganagar' is celebrated. There is a continuous ride for seven days in Nathdwara. The dress of the people participating in the ride is same color as Gangaur dress

19. 'Hansawali', an early work of Rajasthani literature was written by

- A. Hemchandra
- B. Asayit
- C. Sridhar Vyas
- D. Isardas

Ans. B

Sol. 'Hansawali' was written by Asayit

20. Nodal Agency for generation of energy from non-conventional energy sources in Rajasthan is

- A. Rajasthan Renewable Energy Corporation Ltd.
- B. State Ministry of New Renewable Energy
- C. Centre for New and Renewable Energy Sources
- D. None of these

Ans. A

Sol. Rajasthan Renewable Energy Corporation Limited (RRECL) was formed in August 2002 by combining RDA (Rajasthan Energy Development Agency) and Rajasthan State Power Corporation Limited (RSPCL).

21. The Central Institute of Arid Horticulture is situated at

- A. Bikaner
- B. Sri Ganganagar
- C. Jodhpur
- D. Udaipur

Ans. A

Sol. The Central Institute of Arid Horticulture was established in the year 1993 in Bikaner district

22. Highest number of cattle fairs are held in which district of Rajasthan?

- A. Jhalawar
- B. Nagaur
- C. Barmer
- D. Hanumangarh

Ans. A

Sol. In Rajasthan, state level cattle fair fills most in the district of Jhalawar. In this district, the famous Gomti Sagar animal fair, Jhalrapatan and Sri Chandraprabha cattle fair are also known as Jhalrapatan.

23. National Ayurvedic Institute is situated at:

- A. Jaipur
- B. Jodhpur
- C. Udaipur
- D. Kota

Ans. A

Sol. National Institute of Ayurveda, Ministry of Health and Family Welfare, is an autonomous body of the Government of India. It has been established in the city of Jaipur

24. What is the causing agent of typhoid

- A. Lactobacillus
- B. Salmonella typhimurium
- C. Trypanosoma brucei
- D. None of the above

Ans. B

Sol. The typhoid caused by bacterium salmonella typhimurium. The bacteria live in intestine and in blood of infected human. The transmission of infection occurs human to human.

25. What could be the suffix for the compound which has alcohol as a functional group?

- A. -al
- B. -one
- C. -ol
- D. None of these

Ans. C

Sol. Alcohol sometime known by its chemical name i.e., ethanol. The compounds which has alcohol as its functional group uses -ol as a suffix in its name.

26. The resources of water on the earth is/are:

- A. Sea/Ocean
- B. Snow on mountain and near poles
- C. Monsoon rain
- D. Ocean, snow and rain, underground water

Ans. D

Sol. The various sources of water on earth are as follows: ocean, snow, rain, underground water, freshwater lakes, ponds, etc.

27. Which one is wrongly matched?

- A. Mercury - Nearest to the sun
- B. Venus - Hottest planet
- C. Saturn - Planet without rings
- D. Mars - Called red planet

Ans. C

Sol. Mercury is the nearest planet.
Venus is the hottest planet.
Saturn is a planet with rings.
Mars is also known as the red planet.

28. The two major greenhouse gases produced around the globe
- A. Methane
 - B. Carbon dioxide
 - C. Carbon monoxide
 - D. Both A and B

Ans. D

Sol. Carbon dioxide and Methane are two major greenhouse gases produced as side products of various industries, processes and activities and events such as vehicle and industrial pollution.

29. In order to pass in exam a student is required to get 780 marks out of the aggregate marks. Sonu got 728 marks and was declared failed by 5 percent. What are the maximum aggregate marks a student can get in the examination?
- A. 1040
 - B. 1100
 - C. 1000
 - D. Cannot be determined
 - E. None of these

Ans. A

Sol. Let maximum marks be x

Therefore;

$$x \times 5/100 = 780 - 728 = 52$$

$$x = 52 \times 100/5 = 1040$$

Hence Option A is correct

30. The angles of a triangle are in the ratio of 3 : 5 : 4. What is the difference between twice the smallest angle and the second largest angle of the triangle?
- A. 25 °
 - B. 10 °
 - C. 45 °
 - D. 30 °
 - E. None of these

Ans. D

Sol. Angles of the triangle are

$$3/12 * 180 = 45 \text{ degrees}$$

$$5/12 * 180 = 75 \text{ degrees}$$

$$4/12 * 180 = 60 \text{ degrees}$$

$$\text{Required difference} = 2*45 - 60 = 30 \text{ degrees}$$

31. **Direction:** What value will come in place of the question mark (?) in the following question?

$$148\% \text{ of } 13700 + 82\% \text{ of } 14500 = ? + 22166$$

- A. 10000
C. 25000
E. 20200
- B. 15000
D. 32166

Ans. A

Sol. $148\% \text{ of } 13700 + 82\% \text{ of } 14500 = ? + 22166$

$$\frac{148}{100} \times 13700 + \frac{82}{100} \times 14500 = ? + 22166$$

$$20276 + 11890 = ? + 22166$$

$$32166 = ? + 22166$$

$$? = 32166 - 22166$$

$$? = 10000$$

Hence, option A is correct.

32. How many six digits numbers can be formed out of the digits of the number 766767?

- A. 50
C. 60
E. 72
- B. 40
D. 20

Ans. D

Sol. Required number of 6 digits numbers = $6! / 3! * 3! = 20$ ways

33. 'मृत्यु' शब्द में कौनसा लिंग होता है?

- A. पुल्लिंग
C. नपुंसकलिंग
- B. स्त्रीलिंग
D. इनमें से कोई नहीं।

Ans. B

Sol. मृत्यु शब्द का अर्थ है मृत्यु या मरण। यह एक स्त्रीलिंग शब्द है। इसका अर्थ अंतिम अवस्था भी होता है।

स्त्रीलिंग- वह संज्ञा शब्द जो हमें स्त्री जाति का बोध कराते हैं, वे शब्द स्त्रीलिंग संज्ञा शब्द कहलाते हैं।

जैसे- लड़की जा रही है।

अन्य उदाहरण के माध्यम से समझ सकते हैं- सीमा गाना गा रही है। यहाँ सीमा एक स्त्रीलिंग शब्द है।

34. "महाप्राण ध्वनियाँ" व्यंजन वर्ग में किससे संबंधित है?

- A. पहला, दूसरा
C. दूसरा, तीसरा
- B. पहला, चौथा
D. दूसरा, चौथा

Ans. D

Sol. महाप्राण व्यंजन - ऐसे व्यंजन जिनको बोलने में अधिक प्रत्यन करना पड़ता है और बोलते समय मुख से अधिक वायु

निकलती है। उन्हें महाप्राण व्यंजन कहते हैं। इनकी संख्या 15 होती है।

ख घ

छ झ

ठ ढ

थ ध

फ भ

ढ़

श ष स ह

क वर्ण का दूसरा, चौथा अक्षर

च वर्ण का दूसरा, चौथा अक्षर

ट वर्ण का दूसरा, चौथा अक्षर

त वर्ण का दूसरा, चौथा अक्षर

प वर्ण का दूसरा, चौथा अक्षर

चारों उष्म व्यंजन - श ष स ह

एक उच्छिप्त व्यंजन - ढ

35. "चूहा बिल से बाहर निकला।" वाक्य में किस कारक का प्रयोग हुआ है ?

A. करण कारक

B. अपादान कारक

C. संबंध कारक

D. अधिकरण कारक

Ans. B

Sol. संज्ञा या सर्वनाम के जिस रूप से किसी वस्तु के अलग होने का बोध हो वहाँ पर अपादान कारक होता है। संज्ञा या सर्वनाम के जिस रूप से अलग होना, उत्पन्न होना, डरना, दूरी, लजाना, तुलना करना आदि का पता चलता है उसे अपादान कारक कहते हैं। इसका विभक्ति चिन्ह से होता है। इसकी पहचान किससे जैसे प्रश्नवाचक शब्द से भी की जा सकती है।

36. निम्न में स्पर्श संघर्षी व्यंजन कौन से हैं:-

A. श, स, ष

B. च, छ, ज

C. ल, र, व

D. श, च, ल

Ans. B

Sol. जिन व्यंजनों के उच्चारण में हवा बिना किसी अवयव से रगड़ खाए बाहर निकलती है, उन्हें संघर्षहीन या अर्ध-स्वर कहते हैं।

य, व व्यंजन संघर्षहीन या अर्ध-स्वर हैं।

37. **Direction:** In the given question, a part of the sentence is printed in bold. Below the sentence, alternatives to the emboldened part are given as (A), (B), (C) and (D), which may help improve the sentence. Choose the correct alternative out of the given five options. In case the given sentence is correct, your answer will be option (E), i.e., "No correction required".

By the time she **had realized she had cancer**, it had already spread.

- A. realized she had cancer
- B. realize she had cancer
- C. realizes she had cancer
- D. has realized she had cancer
- E. No correction required

Ans. A

Sol. When 'by the time' is used and the time clause tense is in simple past, the main clause will be in present perfect. So, the correct answer is A.

38. **Direction:** Read the sentence to find out whether there is any error in it. The error, if any, will be in one part of the sentence. The number corresponding to that part will be your answer. If the given sentence is correct as it is, mark the answer as No error. Ignore the errors of punctuation if any.

Janet is determined (1)/ to be success (2)/ in whatever field (3)/ she chooses. (4)/ No error (5)

- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

Ans. B

Sol. 'Success' must be replaced by 'successful' as per the meaning of the context. Hence option B is correct

39. **Direction:** A sentence with two blanks is given, each blank indicating that something has been omitted. Choose the words that best fit the meaning of the sentence as a whole.

The water transport project on the west coast is _____ to get a shot in the arm with a new plan in which the Road Development Corporation will build the infrastructure and _____ a private party to operate the service.

- A. scheduled, lets
- B. verge, permit
- C. set, sanctions
- D. slated, allow
- E. bound, manage

Ans. D

Sol. "Slated" means scheduled.

'A shot in the arm' means a boost in spirit. In the first blank 'scheduled', 'slated' and 'bound' can be filled, as they would indicate that the transport project is planned to be boosted. We need a verb in the second blank. Among "lets", "allow" and "manage", "allow" makes appropriate sense. Had there been "let" in place of, "lets", we could have considered the option. Option D is the correct answer.

40. **Direction:** Read the sentence to find out whether there is any error in it. The error, if any, will be in one part of the sentence. If the given sentence is correct as it is, mark E i.e. No error as the answer. Ignore the errors of punctuation, if any.

- A. In order
- B. to be successful
- C. you must worked
- D. very hard
- E. No Error

Ans. C

Sol. The error is in the third part of the statement. The sentence is a generic statement and thus needs to be in the simple present tense, thus 'worked' needs to be replaced with 'work'.

41. The defect in painting that caused due to under thinning of paints or due to poor quality brush is called as

- A. Wrinkling
- B. Bloom
- C. Brush Marks
- D. Blistering

Ans. C

Sol. Brush Marks: It is caused due to under thinning of paints or due to poor quality brush.

42. Which of the following are the properties of Cast Iron?

- a) It is hard and brittle with specific gravity of 4.5
 - b) It has low melting point (1200^o C)
 - c) It cannot be magnetized and not suitable for forging.
- A. only a
 - B. a and b
 - C. b and c
 - D. a, b and c

Ans. C

Sol. Cast iron is hard and brittle with specific gravity of 7.5

43. Polyvinyl chloride (PVC) is a:

- A. Thermoplastic material
- B. Thermosetting material
- C. Elasto-plastic material
- D. Rigid plastic material

Ans. A

Sol. Polyvinyl chloride (PVC) is considered a thermoplastic. Thermoplastics become mouldable above a specific temperature and then return back to a solid when cooled. They can be melted again and again. Thermoplastics are known for their high molecular weight because intermolecular interactions increase as the plastic is cooled.

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44. _____ recognizes that a project or phrase should begin and commits the organization to do so:

- A. Initiating Process
- B. Solicitation Process
- C. Scoping process
- D. Planning process

Ans. A

Sol. Creation of project character is the specific activity that is done in the Initiating process.

45. Unlike bar charts, milestone charts show?

- A. Scheduled chart or completion of major deliverables and key external interfaces
- B. Activity start and end dates of critical tasks
- C. Expected durations of the critical path
- D. Dependencies between complementary projects

Ans. A

Sol. Milestone are singular points in time, such as the start or completion of a significant activity or group of activities.

46. What is the pressure difference in N/m^2 between outside and inside the water droplet of diameter 1mm if the surface tension of water is $0.08N/m$?

- A. 160
- B. 320
- C. 640
- D. 80

Ans. B

Sol. For a liquid droplet, $\Delta P = \frac{4\sigma}{d} = \frac{4 \times 0.08}{1 \times 10^{-3}} = 320 N/m^2$

47. Find the approximate height (in m) of an oil column of specific gravity 0.9 if the gauge pressure is 20kPa. (Take $g = 10m/s^2$)

- A. 3.33
- B. 1.8
- C. 18
- D. 2.22

Ans. D

Sol. Given gauge pressure = 20kPa = $20 \times 10^3 Pa$

$$h\rho g = 20 \times 10^3$$

$$h \times (0.9 \times 1000) \times 10 = 20 \times 10^3$$

$$\text{Therefore } h = 2.22m$$

48. A 'wake' is a

- A. region before the stagnation point
- B. disturbed region downstream of separation
- C. region after the stagnation point
- D. point of separation

Ans. B

Sol. The wake is the region of disturbed flow (often turbulent) downstream of a solid body moving through a fluid, caused by the flow of the fluid around the body.

52. Which of the following best defines "Negative Stock"?
- A. Project ahead of schedule
 - B. Project on schedule
 - C. Project behind schedule
 - D. None of the above

Ans. C

Sol. Negative slacks-project behind schedule Positive slacks-project ahead schedule

53. Quality circles in the construction industry can have the following participants:
- A. Engineers and architects
 - B. Contractors and raw material suppliers
 - C. Clients and consultants
 - D. All of the above

Ans. D

Sol. Quality circles are a group of workers who do the same or similar work, who meet regularly to identify, analyze and solve works related problems. It includes participation of engineers and architects, contractors and raw material suppliers, clients and consultants etc.

54. Floor Area Index (FA) is
- A. $\frac{\text{Covered area of all floors}}{\text{Plot area}} \times 100$
 - B. $\frac{\text{Covered area of ground floors}}{\text{Plot area}} \times 100$
 - C. $\frac{\text{Plot area}}{\text{Covered area of ground floors}} \times 100$
 - D. $\frac{\text{Plot area}}{\text{Covered area of all floors}} \times 100$

Ans. A

Sol. Covered area of all

$$\text{Floor area index} = \frac{\text{Floors}}{\text{Plot area}} \times 100$$

55. A beam of circular cross-section compression to a rectangular section of the same material and equal cross-section area than the
- A. The circular section resist more Shear force than the rectangular section
 - B. rectangular section resist more Shear force than a circular section
 - C. a circular section resist more Bending Stress then rectangular section
 - D. the circular section and rectangular section resist an equal Shear force

Ans. A

Sol. Circular section resist more Shear force then rectangular section and Rectangular resist more Bending Stress

56. Principle stress in a point of elastic material is 1.5σ (tension), $.5\sigma$ (compression). The elastic limit in tension is 220N/mm^2 and $\mu=.3$. The value of σ at failure when computed by max Shear stress theory is

- A. 100 N/mm²
- C. 220 N/mm²

- B. 110 N/mm²
- D. 120 N/mm²

Ans. B

Sol. $\frac{\sigma_1 - \sigma_2}{2} = \frac{Fy}{2}$

$$\frac{1.5\sigma - (-.5\sigma)}{2} = \frac{220}{2}$$

$$\sigma = 110 \text{ N/mm}^2$$

57. Force method of structural analysis is suitable when

A. $D_S > D_k$

B. $D_S = D_k$

C. $D_S < D_k$

D. None of the above

Ans. C

Sol. Force method of structural analysis is suitable when $D_S < D_k$

Note:

Force method of structural analysis

- Unknown is force
- Suitable when $D_S < D_k$
- Force displacement equations are written and solution for unknown forces are obtained from compatibility equations
- E.g.: Three moment equation

Castigliano's method

Strain energy method

Flexibility method

Virtual work method / Unit load method

Column analogy method

58. What is the ratio of load carrying capacity of a fixed beam to simply supported beam if they have same span and having same maximum bending moment and loaded with point load at center

A. 1.5

B. 4

C. 2

D. 3

Ans. C

Sol. Let the intensity of point load be W_1 and W_2 for fixed beam and simply supported beam.

Given that,

Maximum bending moment of fixed beam = Maximum bending moment of simply supported beam

$$\frac{W_1 L}{8} = \frac{W_2 L}{4}$$

$$\frac{W_1}{W_2} = 2$$

59. The grain size of the medium grained sand lies between
- A. 4.75mm - 2 mm
 - B. 2mm - 0.425 mm
 - C. 0.425mm - 75 μ
 - D. 75 μ - 2 μ

Ans. B

- Sol. * 4.75mm - 2 mm - coarse sand
* 2mm - 0.425 mm - medium sand
* 0.425mm - 75 μ - fine sand
* 75 μ - 2 μ - silt

60. For routine consolidation test, the diameter and thickness of the specimen is
- A. 20mm and 60mm respectively
 - B. 50mm and 25mm respectively
 - C. 60mm and 20mm respectively
 - D. 25mm and 50mm respectively

Ans. C

Sol. For routine consolidation test, the diameter and thickness of the specimen is 60mm and 20mm respectively and thickness of the specimen should be not less than 10 times the Maximum size of the particle

61. Which of the following are not the essential characteristics of drinking water as per IS 10500 : 2012?
- A. Odour
 - B. Taste
 - C. pH
 - D. Lead

Ans. B

Sol. Taste is not an essential characteristics of drinking water as per IS 10500:2012.

62. Algae if present in drinking water:
- A. Clog filters and create impounded difficulties
 - B. Impart coloration
 - C. Produce taste and odour
 - D. All of these

Ans. D

Sol. Algae gives false odour, imparts colour and clogs filters . copper sulphate is used to kill algae.

63. The stages of zone of pollution in the river stream from upstream to downstream are
- A. Zone of active decomposition, zone of degradation, zone of clearer water, zone of recovery.
 - B. Zone of degradation, zone of active decomposition, zone of recovery, zone of clearer water.
 - C. Zone of clearer water, Zone of active decomposition, zone of degradation, zone of clearer water, zone of recovery.
 - D. None of these

Ans. B

Sol. Stages of Zones of pollution

Zone of degradation, Zone of active decomposition, Zone of recovery and Zone of clearer water.

64. Find the value of k if the development length of a deformed reinforcement bar is

expressed as $\left(\frac{1}{k}\right) \frac{\phi\sigma_{st}}{\tau_{bd}}$.

- A. 1
- B. 4
- C. 5
- D. 6.4

Ans. D

Sol. For a deformed reinforcement bar subjected to tension the development length,

$$L_d = \frac{\phi\sigma_{st}}{4 \times (1.6 \times \tau_{bd})} = \frac{1}{6.4} \times \frac{\phi\sigma_{st}}{\tau_{bd}}$$

The value of k = 6.4

65. The permissible bond stress in deformed reinforcement bars is more than plain bars by
- A. 60%
 - B. 50%
 - C. 40%
 - D. 30%

Ans. A

Sol. As per IS 456:2000, the permissible bond stress of HYSD deformed bars will be 60% more than that of plain bars. The bond resistance is increased due to ribs or lugs.

66. The maximum permissible stress for power driven field rivet in axial tension is?
- A. 80
 - B. 90
 - C. 100
 - D. 270

Ans. B

Sol. The maximum permissible stress for power driven field rivet in axial tension is 90

Note:

	Axial tension(N/mm ²)	Shearing(N/mm ²)	Bearing (N/mm ²)
Power driven shop rivet	100	100	300
Power driven field rivet	90	90	270
Hand driven field rivet	80	80	300

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67. Steel structures are ideally suitable for impact loads because they have high

- A. Toughness value
- B. Yield stress
- C. Section modulus
- D. Plastic modulus

Ans. A

Sol. Toughness is the ability of a metal to resist fracture and it is significant for ductile material only. Ductile material has greater fracture strain, hence they are more tough, so mild steel is tougher than cast iron. So, toughness is desirable against impact loading.

68. For walls thicker than 1 brick, which bond should be provided for strength?

- A. English bond
- B. Flemish bond
- C. Double Flemish bond
- D. Any of the above

Ans. A

Sol. For walls thicker than 1 brick, English bond is stronger than Flemish bond. If walls having thickness equal to an odd number of half brick, the same course will show stretchers on one face and headers on another face, hence English bond provides more strength.

69. What is the actual size (mm) of the standard modular brick as per Indian Standards?

- A. 190 x 90 x 90
- B. 200 x 90 x 90
- C. 200 x 100 x 100
- D. 229 x 114 x 76

Ans. A

Sol. The standard brick size for modular bricks is 190 mm x 90 mm x 90 mm.

With mortar thickness, the dimension of the brick becomes 200 mm x 100 mm x 100 mm which is also known as the nominal size of the modular brick.

Bricks size available for construction in India is 230 mm x 110 mm x 70 mm.

70. In building drawing, which factor is not considered on studying of site?





- A. number of gender ratio
- B. number of people using the building
- C. type of people, their education, awareness
- D. dressing sense of the people

Ans. D

Sol. After these studies planner must have an interaction with the master/residents to understand the following:

- a) Aim/objective/purpose of building
- b) Number of people using the building
- c) Type of people, their education, awareness
- d) Art and culture of the people etc.

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