Exported On *	2024/07/15 8:14:14
Title *	Question Paper Answer Key
OES Exam *	GPSC03202407 / Lecturer in Civil Engineering / Completed / 2024-07-14

1

Question Description	In a plane stress problem
	
	   i. normal stress in the third direction is zero
	  ii. strains in all directions are present
	 iii. strain in the third direction is zero
	 iv. normal stresses in all directions are present
	
	Correct answer is

A	(i), (iii)
B	(ii), (iv)
C	(iii), (iv)
D	(i), (ii)
E	None of the above
Correct Answer	D
Marks	1

2		
Question Description		The shape of a cable, when it is loaded with a uniformily distributed load throughout its span is:
A		Linear
B		Parabolic
C		Trapezoidal
D		Linear or parabolic depending on the intensity of loading
E		None of the above
Correct Answer		B
Marks		1

3		
Question Description	The component of a railway track that transfers its load directly to the ballast is called:	
A	Sleepers	
B	Wheels	
C	Locomotive	
D	Formation	
E	None of the above	
Correct Answer	A	
Marks	1	

4		
Question Description	High COD to BOD ratio of an organic pollutant represents	
A	High biodegradability of the pollutant	
B	Low biodegradability of the pollutant	
C	Presence of free oxygen for aerobic decomposition	
D	Presence of toxic material in the pollutant	
E	None of the above	
Correct Answer	D	
Marks	1	

5	Question Description	The minimum crushing strength of brick should be
	A	35 kg/cm^2
	B	50 kg/cm^2
	C	15 kg/cm^2
	D	20 kg/cm^2
	E	None of the above
	Correct Answer	A
	Marks	1

6	Question Description	Longitudinal stiffeners are introduced to beam splices when:
	A	There is a change in size between two adjacent sections of beams
	B	There is no change in size between two adjacent sections of beams
	C	There occurs a change in moment between two sections of beams
	D	There is no change in moment between two sections of beams.
	E	None of the above
	Correct Answer	A
	Marks	1

7	Question Description	Slow sand filters are capable of removing bacteria by about:
	A	90%
	B	95%
	C	98-99%
	D	100%
	E	None of the above
	Correct Answer	C
	Marks	1

8		
Question Description	Which one the following closely represents the shape of the earth	
A	Spheroid	
B	Ellipsoid	
C	Prolate spheroid	
D	Oblate spheroid	
E	None of the above	
Correct Answer	D	
Marks	1	

9	Question Description	The deviator stress developed in the soil sample in triaxial test is equal to:
		a. $\sigma_1 + \sigma_3$
		b. $\sigma_1 - \sigma_3$
		c. $\sigma_2 - \sigma_3$
		d. $\sigma_1 + \sigma_2$
		where σ_1, σ_2 and σ_3 represent the major, intermediate and minor principal stresses respectively.
	A	a
	B	b
	C	c
	D	d
	E	None of the above
	Correct Answer	B
	Marks	1

10	Question Description	In a C_2 profile of gradually varied open channel flow
		A. $y_c > y > y_n$
		B. $y > y_n > y_c$
		C. $y_n > y_c > y$
		D. does not exist
		y_n = normal depth, y_c = critical depth
	A	A
	B	B
	C	C
	D	D
	E	None of the above
	Correct Answer	D
	Marks	1

11	Question Description	Which of the following is not an assumption for working stress method:
	A	Tensile strength of concrete is considered
	B	Bond between steel and concrete is perfect within the elastic limit of stee;
	C	Concrete is a perfectly elastic material
	D	Plane sections remain plane even after bending
	E	None of the above
	Correct Answer	A
	Marks	1

12	Question Description	The variable head permeability test can be used for:
	A	Coarse grained soil
	B	Less permeable soil
	C	Saturated soil
	D	All of these
	E	None of the above
	Correct Answer	B
	Marks	1

13	Question Description	The value of Froude number during subcritical flow is:
	A	Zero
	B	Greater than one
	C	Less than one
	D	Not defined
	E	None of the above
	Correct Answer	C
	Marks	1

14	Question Description	The shape of the transition curve preferred by the IRC for highways is:
	A	parabola
	B	lemniscate
	C	cubic parabola
	D	spiral
	E	None of the above
	Correct Answer	A
	Marks	1

15	Question Description	The modular ratio of a concrete of M20 grade reinforced with Fe250 steel is:
	A	11
	B	9
	C	13
	D	3
	E	None of the above
	Correct Answer	D
	Marks	1

16	Question Description	Most common method of prestressing used for factory production is
	A	long line method
	B	Freyssinet system
	C	Magnel – Blaton system
	D	Lee – Mc Call system
	E	None of the above
	Correct Answer	A
	Marks	1

17	Question Description	For a linearly elastic material structural element
	A	Stiffness is directly proportional to flexibility
	B	Stiffness is inversely proportional to flexibility
	C	Stiffness is equal to flexibility.
	D	Stiffness and flexibility are not related.
	E	None of the above
	Correct Answer	B
	Marks	1

18	Question Description	Match the following methods with appropriate analysis

Match the following methods with appropriate analysis

(1) Strain Energy Methods   (A) Influence lines for redundant structure
(2) Complementary Energy Methods   (B) Deflection of linear structures
(3) Muller Breslou Principle   (C) Deflection of non-linear structures
(4) Kani's Method   (D) Analysis of multi storey frames

The correct match is
A.   (1-B) (2-C) (3-A) (4-D)
B.   (1-A) (2-B) (3-C) (4-D)
C.   (1-B) (2-C) (3-D) (4-A)
D.   (1-D) (2-C) (3-A) (4-B)

A	A
B	B
C	C
D	D
E	None of the above
Correct Answer	A
Marks	1

19

Question Description	The hydraulic mean depth of the most economical trapezoidal channel section having a depth 'd' and side slope 'z' is:
A	d/2
B	d
C	2d
D	3d
E	None of the above
Correct Answer	A
Marks	1

20

Question Description	According to IS specifications the final setting time of ordinary portland cement should not be more than
A	1/2 hr
B	5 hrs
C	8 hrs
D	10hrs
E	None of the above
Correct Answer	D
Marks	1

21	Question Description	The dispersion agent correction in hydrometer reading is always:
	A	Positive
	B	Negative
	C	Positive or negative
	D	Zero
	E	None of the above
	Correct Answer	B
	Marks	1

22	Question Description	In a real beam, at an end, the boundary conditions of zero slope and zero vertical displacement exists. In the corresponding conjugate beam the boundary conditions at this end will be;
	A	Shear Force = 0, Bending Moment = 0
	B	Slope = 0, Vertical displacement = 0
	C	Slope = 0, Bending Moment = 0
	D	Shear Force = 0, Vertical displacement = 0
	E	None of the above
	Correct Answer	A
	Marks	1

23	**Question Description**	The total cost of a building is Rs.3, 00,000/-. The depreciated cost of the building after 30 years, if the life span is 90 years and scrap value is Rs.30000/-, will be (by Declining Balance method).
	A	2,10,000
	B	1,39,504
	C	1,75,254
	D	2,50,000
	E	None of the above
	Correct Answer	B
	Marks	1

24	Question Description	As per IRC, the minimum length of transition curve for mountainous terrain road with radius of curvature 100m and design speed of vehicle 100 kmph is
	A	270 m
	B	200 m
	C	100 m
	D	170 m
	E	None of the above
	Correct Answer	C
	Marks	1

25	Question Description	Well foundations are commonly used as foundation for following structures
	A	Water tanks
	B	Buildings
	C	Bridges
	D	Reciprocating machines
	E	None of the above
	Correct Answer	C
	Marks	1

26	Question Description	Negative skin friction occurs when
	A	An upward drag exists in pile.
	B	The surrounding soil settles more than pile.
	C	The pile passes continuously through a firm soil.
	D	The driving operation begins.
	E	None of the above
	Correct Answer	B
	Marks	1

27	Question Description	A chain line crosses a river; the points B and C are on the near and distant banks respectively. A line BD of 50m lengths is set out at right angles to the chain line at B. If the angle BDC is 45□, the width of the river is
	A	85.4m
	B	89.1m
	C	50.0m
	D	60.2m
	E	None of the above
	Correct Answer	C
	Marks	1

28	Question Description	The time interval between two consecutive watering of crops is called:
	A	Crop period
	B	Period
	C	Base period
	D	Rotation period
	E	None of the above
	Correct Answer	D
	Marks	1

29	Question Description	The minimum grade of concrete mix suggested by IS code for pretensioned systems is:
	A	M30
	B	M40
	C	M50
	D	M60
	E	None of the above
	Correct Answer	B
	Marks	1

30	Question Description	A thin cylindrical vessel of mean diameter D and of thickness t closed at both ends is subjected to water pressure p. The value of hoop stress and longitudinal stress in the shell shall be respectively
	A	D/2t , pD/4t
	B	pD/4t, pD/8t
	C	pD/8t, pD/8t
	D	pD/t, pD/2t
	E	None of the above
	Correct Answer	A
	Marks	1

31	Question Description	Which of the following soils achieve a higher maximum dry density and a lower optimum water content?
	A	Coarse grained soil
	B	Fine grained soil
	C	Saturated soil
	D	Black cotton soil
	E	None of the above
	Correct Answer	A
	Marks	1

32	Question Description	For a soil sample, if the ratio of saturated unit weight to dry unit weight is 1.2 and specific gravity of soil solids is 2.65, then its void ratio is:
	A	0.58
	B	0.66
	C	0.53
	D	0.94
	E	None of the above
	Correct Answer	C
	Marks	1

33	Question Description	The worst condition of uplift on the floor that can be expected in a siphon aqueduct is:
	A	the canal is full and drainage is empty with water table at drainage bed
	B	the canal and drainage are flowing full
	C	the canal is empty and drainage is lowing full with water table at drainage bed
	D	the canal is running full and drainage runs empty with water table below the floor
	E	None of the above
	Correct Answer	C
	Marks	1

34	Question Description	The planning technique which can be effectively used, where number of structures of similar types (linear and repetitive) are built, is
	A	CPM
	B	GERT
	C	Bar chart
	D	LoB
	E	None of the above
	Correct Answer	D
	Marks	1

35	Question Description	The maximum aeration period provided for a conventional activated sludge system is:
	A	2 hours
	B	3 hours
	C	4 hours
	D	12 hours
	E	None of the above
	Correct Answer	C
	Marks	1

36	Question Description	The colour of septic sewage is:
	A	Pink
	B	Red
	C	Black
	D	Grey
	E	None of the above
	Correct Answer	C
	Marks	1

37	Question Description	The following method of ranging is performed if both ends of a survey line is visible
	A	Indirect
	B	Reciprocal
	C	Direct
	D	Local
	E	None of the above
	Correct Answer	C
	Marks	1

38	Question Description	The camber to be provided on earth roads is:
	A	4%
	B	3%
	C	2%
	D	1.7%
	E	None of the above
	Correct Answer	D
	Marks	1

39	Question Description	A clay sample of 24 mm thickness when tested with double drainage in laboratory, consolidated by 50%. The sample was obtained from a clay layer 4 m thick. The time taken by the clay sample to consolidate 50% with double drainage is:
	A	365 days
	B	386 days
	C	150 days
	D	750 days
	E	None of the above
	Correct Answer	B
	Marks	1

40	Question Description	Standard 5 day BOD of a waste sample is nearly x% of the ultimate BOD, where x is?
	A	58%
	B	62%
	C	68%
	D	72%
	E	None of the above
	Correct Answer	C
	Marks	1

41	Question Description	The design speed on a highway is 60 kmph. If the radius of the curve is 150 m and the coefficient of friction is 0.15, the super elevation is:
	A	0.04
	B	0.15
	C	0.02
	D	0.07
	E	None of the above
	Correct Answer	A
	Marks	1

42	Question Description	If the total hardness of water is greater than its alkalinity, the carbonate hardness will be equal to
	A	Total alkalinity
	B	Total hardness
	C	Total hardness - total alkalinity
	D	Non carbonate hardnes
	E	None of the above
	Correct Answer	A
	Marks	1

43		

Question Description	X-ray films are a source of which of the following gas?
	  a. SO_2
	  b. CO_2
	  c. NO_2
	  d. SO_3	

A	a	
B	b	
C	c	
D	d	
E	None of the above	
Correct Answer	C	
Marks	1	

44	Question Description	The correction for curvature for a distance of 1200 m is :
	A	0.113 m
	B	0.131 m
	C	0.133 m
	D	0.313 m
	E	None of the above
	Correct Answer	A
	Marks	1

45	Question Description	Contour lines close together indicate a slope which is:
	A	Steep
	B	Gentle
	C	Uniform
	D	Undulated
	E	None of the above
	Correct Answer	A
	Marks	1

46	Question Description	A soil has a discharge velocity of 6×10^{-7} m/s and a void ratio of 0.5. Its seepage velocity is
	A	18×10^{-7} m/s
	B	12×10^{-7} m/s
	C	6×10^{-7} m/s
	D	3×10^{-7} m/s
	E	None of the above
	Correct Answer	A
	Marks	1

47	Question Description	The following is not a method to determine the average value of precipitation from rainfall data of different stations:
	A	Thiessen polygon method
	B	Arithmetic mean method
	C	Geometric mean method
	D	Isohyetal method
	E	None of the above
	Correct Answer	C
	Marks	1

48	Question Description	Which one of the following statements is wrong regarding permanent hardness?
	A	It is also called carbonate hardness
	B	It is due to the presence of sulphates, chlorides and nitrates of calcium and magnesium
	C	It cannot be removed by boiling
	D	It requires special methods of water softening to get removed
	E	None of the above
	Correct Answer	A
	Marks	1

49	Question Description	During temperature inversion in atmosphere, air pollutants tend to
	A	Accumulate above inversion layer
	B	Accumulate below inversion layer
	C	Disperse laterally
	D	Disperse vertically
	E	None of the above
	Correct Answer	D
	Marks	1

Question Description	The following statement is not true for the method of joints:
A	Equilibrium of joints is considered
B	Number of equilibrium equations is equal to 2
C	This method can be used for solving upto 3 unknown parameters at a joint
D	For calculating internal forces in any chosen member, the forces in a prior adjacent member are to be calculated first.
E	None of the above
Correct Answer	C
Marks	1

51	Comprehension	Read the passage below and answer the questions:
		It is believed by many that the pharma industry in our country preys on pestilence for profits. As the primary sector thrives under the benevolent monsoons, the food grain production may hike by hundreds of million tonnes. The generous use of pesticide is said to be a key factor in this race for a quantum jump in agricultural productivity in the country. On the basis of target species pesticides can be divided into four broad categories, namely, insecticides, herbicides, fungicides and rodenticides. Presently, insecticides contribute to nearly 75 per cent of the turnover of the pesticide industry. But in the West the trend is different: fungicides and herbicides account for the largest share of consumption in those countries.
	Question Description	In the above passage "pestilence" is used to imply
	A	rise in bubonic plague
	B	increase in irritation
	C	proliferation of pests
	D	growth of disease
	E	None of the above
	Correct Answer	C
	Marks	1

Comprehension	Read the passage below and answer the questions:
	It is believed by many that the pharma industry in our country preys on pestilence for profits. As the primary sector thrives under the benevolent monsoons, the food grain production may hike by hundreds of million tonnes. The generous use of pesticide is said to be a key factor in this race for a quantum jump in agricultural productivity in the country. On the basis of target species pesticides can be divided into four broad categories, namely, insecticides, herbicides, fungicides and rodenticides. Presently, insecticides contribute to nearly 75 per cent of the turnover of the pesticide industry. But in the West the trend is different: fungicides and herbicides account for the largest share of consumption in those countries.
Question Description	The term used in the above passage to refer to the pesticide variant that targets "gnawing mammals" is --------
A	herbicide
B	insecticide
C	fungicide
D	rodenticide
E	None of the above
Correct Answer	D
Marks	1

52

53

Comprehension	Read the passage below and answer the questions:
	It is believed by many that the pharma industry in our country preys on pestilence for profits. As the primary sector thrives under the benevolent monsoons, the food grain production may hike by hundreds of million tonnes. The generous use of pesticide is said to be a key factor in this race for a quantum jump in agricultural productivity in the country. On the basis of target species pesticides can be divided into four broad categories, namely, insecticides, herbicides, fungicides and rodenticides. Presently, insecticides contribute to nearly 75 per cent of the turnover of the pesticide industry. But in the West the trend is different: fungicides and herbicides account for the largest share of consumption in those countries.
Question Description	From the options provided below, identify the one that comes closest to the overall sense of the passage
A	In India the trend is to prefer insecticides; in the West it is for herbicides and fungicides
B	In India the agricultural consumption of pesticides is controlled; in the West it is not so.
C	In India the turnover of pesticides is very high; in the West the situation is identical.
D	In India the turnover of insecticides is high; in the West the trend is different.
E	None of the above
Correct Answer	A
Marks	1

54	Comprehension	Read the passage below and answer the questions:
		It is believed by many that the pharma industry in our country preys on pestilence for profits. As the primary sector thrives under the benevolent monsoons, the food grain production may hike by hundreds of million tonnes. The generous use of pesticide is said to be a key factor in this race for a quantum jump in agricultural productivity in the country. On the basis of target species pesticides can be divided into four broad categories, namely, insecticides, herbicides, fungicides and rodenticides. Presently, insecticides contribute to nearly 75 per cent of the turnover of the pesticide industry. But in the West the trend is different: fungicides and herbicides account for the largest share of consumption in those countries.
	Question Description	"The generous use of pesticide is said to be a key factor in this race for a quantum jump in agricultural productivity in the country." In the above sentence, "this race" implies
	A	the generous use of pesticides
	B	a quantum jump in productivity
	C	enhancement of agricultural productivity
	D	key factor in agricultural productivity
	E	None of the above
	Correct Answer	C
	Marks	1

55	Comprehension	Read the passage below and answer the questions:
		It is believed by many that the pharma industry in our country preys on pestilence for profits. As the primary sector thrives under the benevolent monsoons, the food grain production may hike by hundreds of million tonnes. The generous use of pesticide is said to be a key factor in this race for a quantum jump in agricultural productivity in the country. On the basis of target species pesticides can be divided into four broad categories, namely, insecticides, herbicides, fungicides and rodenticides. Presently, insecticides contribute to nearly 75 per cent of the turnover of the pesticide industry. But in the West the trend is different: fungicides and herbicides account for the largest share of consumption in those countries.
	Question Description	From the options given below identify the antonym of the word "generous" in the sense it is used in the passage
	A	frugal
	B	unkind
	C	excessive
	D	malevolent
	E	None of the above
	Correct Answer	A
	Marks	1

56	Question Description	In which country was the "Tagore On The Padma Boat" programme organized?
	A	India
	B	Pakistan
	C	Sri Lanka
	D	Bangladesh
	E	None of the above
	Correct Answer	D
	Marks	1

57	Question Description	Who won the FIDE Under-20 Girl's World Chess Championship in 2024?
	A	Koneru Humpy
	B	Harika Dronavalli
	C	Soumya Swaminathan
	D	Divya Deshmukh
	E	None of the above
	Correct Answer	D
	Marks	1

58	Question Description	On which date is GST Day observed annually in India?
	A	June 30
	B	July 1
	C	August 15
	D	September 1
	E	None of the above
	Correct Answer	A
	Marks	1

59	Question Description	When is National Statistics Day celebrated annually in India?
	A	June 28
	B	June 30
	C	June 29
	D	July 1
	E	None of the above
	Correct Answer	C
	Marks	1

60	Question Description	FC Goa extend goalkeeper _____ contract through 2025-26 season.
	A	Arshdeep Singh
	B	Navdeep singh
	C	Naveen kaur
	D	Arayaman singh
	E	None of the above
	Correct Answer	A
	Marks	1

61	Question Description	At just 21 Years old _____ from Goa, has set a world record in natural body building
	A	Rajesh Phadte
	B	Aravind Gawas
	C	Sangam Popkar
	D	Amit Rane
	E	None of the above
	Correct Answer	C
	Marks	1

62	Question Description	With which country is India conducting the military exercise 'Nomadic Elephant'?
	A	Mongolia
	B	Bhutan
	C	Nepal
	D	Myanmar
	E	None of the above
	Correct Answer	A
	Marks	1

63	Question Description	Who will lead the 28-member Indian athletics team at the Paris 2024 Olympics?
	A	P. V. Sindhu
	B	Amit Panghal
	C	Priyanka Goswami
	D	Neeraj Chopra
	E	None of the above
	Correct Answer	D
	Marks	1

64	Question Description	In India, up to what age are working children classified as child labour?
	A	Up to 16 years
	B	Up to 12 years
	C	Up to 14 years
	D	Up to 15 years
	E	None of the above
	Correct Answer	C
	Marks	1

65	Question Description	Which company introduced the world's first CNG motorcycle named Freedom?
	A	Honda
	B	TVS
	C	Bajaj
	D	Yamaha
	E	None of the above
	Correct Answer	C
	Marks	1

66 **Question Description**	The following question is followed by three statements. You have to study the question and all the three statements given to decide whether any information provided in the statement(s) is redundant and can be dispensed with while answering the given question. At what time will the train reach city X from city Y? I. The train crosses another train of equal length of 200 metres and running in opposite directions in 15 seconds. II. The train leaves city Y at 7.15 a.m. for city X situated at a distance of 558 km. III. The 200 metres long train crosses a signal pole in 10 seconds.
A	I only
B	II only
C	III only
D	II and III only
E	None of the above
Correct Answer	D
Marks	1

67	Question Description	From a point P on a level ground, the angle of elevation of the top tower is 30°. If the tower is 100 m high, the distance of point P from the foot of the tower is:
	A	149 m
	B	156 m
	C	173 m
	D	200 m
	E	None of the above
	Correct Answer	C
	Marks	1

Question Description	**Find the number of triangles in the given figure.**
A	22
B	24
C	26
D	28
E	None of the above
Correct Answer	B
Marks	1
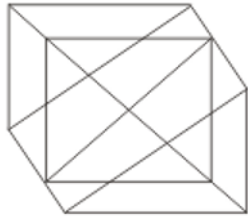
69	Question Description	A fort had provision of food for 150 men for 45 days. After 10 days, 25 men left the fort. The number of days for which the remaining food will last, is:
	A	29
	B	37
	C	42
	D	54
	E	None of the above
	Correct Answer	C
	Marks	1

Question Description	A boat covers a certain distance downstream in 1 hour, while it comes back in $1\frac{1}{2}$ hours. If the speed of the stream be 3 kmph, what is the speed of the boat in still water?
A	12 kmph
B	13 kmph
C	14 kmph
D	15 kmph
E	None of the above
Correct Answer	D
Marks	1

Question Description	On 8th Feb, 2005 it was Tuesday. What was the day of the week on 8th Feb, 2004?
A	Tuesday
B	Monday
C	Sunday
D	Wednesday
E	None of the above
Correct Answer	C
Marks	1

72	Question Description	A 12% stock yielding 10% is quoted at:
	A	Rs. 83.33
	B	Rs. 110
	C	Rs. 112
	D	Rs. 120
	E	None of the above
	Correct Answer	D
	Marks	1

73	Question Description	A trader owes a merchant Rs. 10,028 due 1 year hence. The trader wants to settle the account after 3 months. If the rate of interest 12% per annum, how much cash should he pay?
	A	Rs. 9025.20
	B	Rs. 9200
	C	Rs. 9600
	D	Rs. 9560
	E	None of the above
	Correct Answer	B
	Marks	1

Question Description	What least number must be added to 1056, so that the sum is completely divisible by 23 ?
A	2
B	3
C	18
D	21
E	None of the above
Correct Answer	A
Marks	1

Question Description	A man invests some money partly in 9% stock at 96 and partly in 12% stock at 120. To obtain equal dividends from both, he must invest the money in the ratio:
A	3 : 4
B	3 : 5
C	4 : 5
D	16 : 15
E	None of the above
Correct Answer	D
Marks	1