SSC JE

General Intelligence and Reasoning

Instructions

In the following questions, seleet the related figure/letters/number from the given alternatives.

Question 1

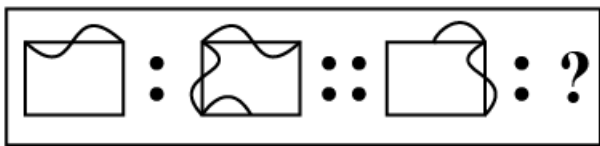*Question figures:*

A

B

C

D

Answer: C

Question 2

Question figures:

A

B

C

D

Answer: C

Question 3

Question figures:

A

B

C

D
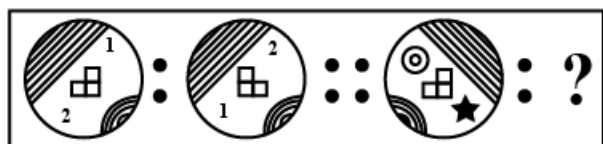
Answer: A

Question 4

23 : 8 :: 32 : ?

A 6

B 9

C 17

D 27

Answer: B

Question 5

MLKJ : NOPQ :: IHGF : ?

A UTSR

B RSTU

C SRUT

D UTRS

Answer: B

Question 6

ACEG : ZXVT :: BDFH : ?

A YWUS

B YXWV

C YWVT

D YXVW

Answer: A

Question 7

BADC : XWZY :: FEHG : ?

A VXRT

B TSVU

C YXCV

D VSXW

Answer: B

Question 8

$\frac{5}{9} : \frac{7}{13} :: \frac{10}{19} : ?$

A $\frac{14}{26}$

B $\frac{14}{27}$

C $\frac{14}{23}$

D $\frac{14}{25}$

Answer: B

Question 9

3 : 9 :: 6 : ?

A 14

B 18

C 17

D 16

Answer: B

Instructions

In the following questions, select the one which different from the other three responses.

Question 10

A 7 - 145

B 6 - 108

C 5 - 75

D 4 - 48

Answer: A

Question 11

A Mars

B Jupiter

C Earth

D Comet

Answer: D

Question 12

A Geeta

B Quran

C Bible

D Mahabharat

Answer: D

Question 13

A Message

B Information

C Matter

D Material

Answer: D

Question 14

A Guitar

B Veena

C Flute

D Sitar

Answer: C

Question 15

A 17 - 142

B 71 - 34

C 41 - 28

D 14 - 28

Answer: D

Question 16

A 3, 5, 7, 9

B 5, 7, 9, 11

C 4, 6, 8, 10

D 2, 5, 9, 10

Answer: D

Question 17

A 8662

B 5731

C 4628

D 2864

Answer: B

Question 18

A Tagore

B Raman

C Bhaskara

D Khurana

Answer: C

Instructions
For the following questions answer them individually

Question 19

Arrange the ee words Soeen order :
1. Grapes
2. Vineyard
3. Whisky
4. Brewing
5. Distillation

A 2, 1, 5, 4, 3

B 3, 5, 4, 2, 1

C 2, 1, 4, 3, 5

D 2, 1, 4, 5, 3

Answer: D

Question 20

Which will appear fourth in the dictionary ?

A Xylophilous

B Xylophagus

C Xylopyrography

D Xylophagan

Answer: C

Question 21

Number of letters skipped in between adjacent letters in the series increases by one. Which of the following series observes the rule given below?

A BEIN

B CDJO

C GJLS

D QUNZ

Answer: A

Question 22

In the following words, the group of letters should not contain more than three vowels. Which of the following words does not conform to the rule?

A SCARCITY

B PROGNOSIS

C COMPLEXITY

D CONVULSION

Answer: D

Instructions

In the following questions, choose the correct alternative from the given responses that will complete the series.

Question 23

?, PSV, EHK, TWZ, ILO

A BEH

B IMP

C ACG

D ADG

Answer: D

Question 24

78, 86, ?, 88, 82, 90

A 76

B 84

C 83

D 80

    Answer: D

Question 25

3 7 13 ? 31 43 57

A 51

B 81

C 41

D 21

    Answer: D

Question 26

EJOT, INSX, AFKP, ?

A CHMS

B XTOJ

C BGLQ

D EJOT

    Answer: C

Instructions

For the following questions answer them individually

Question 27

My father haa two brothers. The youngest has two sons and one daughter. The elder one has one son and two daughters and the remaining one has three sons. If my father has four nephews, how many cousins (brothers) have I got ?

A 6

B 4

C 7

D 5

    Answer: B

Question 28

Find the wrong number in the given series.
3, 7, 15, 31, 64, 127

A 127

B 64

C 31

D 3

  Answer: B

Question 29

A car covers the first half. of the distance between two places at 40 km/hr and the second half of the distance at 60 km/hr. So what is the average speed of the car?

A 46 km/hr

B 48 km/hr

C 50 km/hr

D 60 km/hr

  Answer: B

Question 30

In a certain code language, TOGETHER is written as EGTORETH. How is CONGRATULATE written in that language ?

A GRTULTEANOC

B GNCOUTRAETLA

C GNOCUTARETAL

D GLNAOTCEURTA

  Answer: B

Question 31

In certain code language, REQUEST is written as S2H52TU. How is RETEST written in that language?

A S2V2RV

B S2U2RU

C S2U2TU

D S2V2TV

  Answer: C

Question 32

Some equations are solved on the basis of a certain system. On the same basis, find out the correct answer for the unsolved equation. If $4^2 = 7, 5^2 = 7, 6^2 = 9$, then $7^2 =$?

A 14

B 13

C 10

D 8

  Answer: B

Question 33

Find out the number which belongs to the given group of numbers from the alternatives:
246, 579, 135, 35, 68

A   55

B   468

C   123

D   31

   Answer: B

Question 34

If P stands for ÷, Q standsfor ×, R stands for +, then
18 Q 12 P 4 R 5 = ?

A   59

B   26

C   11.7

D   2.33

   Answer: A

Question 35

From the given alternatives, select the word which cannot be formed using the letters of the given word.
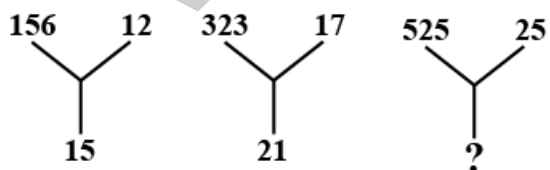**ACCOMPANIED**

A   PANIC

B   COME

C   COMB

D   PAIN

   Answer: C

Instructions

In the following questions, find the missing number from the given responses.

Question 36

A   43

B   17

C   23

D 87

    Answer: C

Question 37

6	11	25
8	6	16
?	5	16

A 10

B 14

C 12

D 16

    Answer: B

Instructions
For the following questions answer them individually

Question 38

Ram travelled 6 ft towards West, he turned left and walked 8 ft, then turned left and walked 4 ft, then turned left and walked 8 ft again. How far is he now from the starting point ?
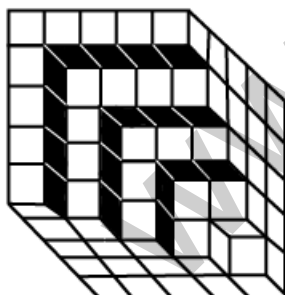
A 8 ft

B 6 ft

C 4 ft

D 2 ft

    Answer: D

Question 39

How many black-faced cubes are there in the given structure ?

A 75

B 55

C 25

D 16

    Answer: B

Question 40

The door of Priya's house faces East. From the back side of the house, she walks straight 50 meters, then turns to the right and walks 50 meters again. Finally, she turns towards the left and stops afler walking 25 meters. Now Priya is facing which direction ?

A   North

B   West

C   East

D   South

Answer: B

Question 41

In the following diagram, rectangle represents males, circle represents urban and square represents educated. Which region represents educated urban males?
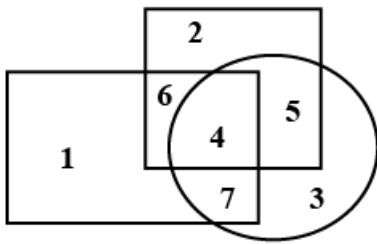
A   5

B   4

C   6

D   7

Answer: B

Question 42

In the following Venn diagram, identify the letter which denotes Film Actors who are Singers but not Directors.

A   D

B   C

C   E

D   F

Answer: A

Question 43

Identify the answer figure from which the pieces given in the question figure have been cut.
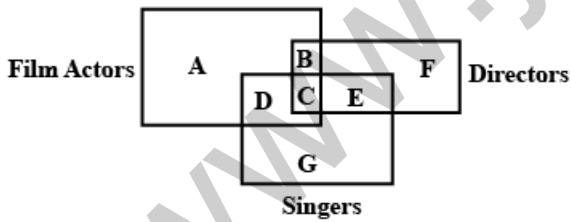
Question figure:

A

B

C

D

Answer: D

Instructions

In the following questions, one or two statements are given, followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts, You have to decide which of the given conclusions, if any, follows from the given statements.

Question 44

Statement :
A social movement is an interaction of people with a common motivational base in frustration.

Conclusions :
I. In a social movement, people who are satisfied interact with frustrated people.
II. Frustrated people interact with each other in a social movement.

A   Only conclusion I follows

B   Only conclusion II follows

C   Neither conclusion I nor II follows

D   Both conclusions I and II follow

   Answer: B

Question 45

Statements:
All scientists are hard-working. No hard-working man is poor.

Conclusions:
I. No scientist is poor
II. No poor man is a scientist.

A   Only conclusion I follows

B   Only conclusion II follows

C   Both conclusions I and II follow

D   None of the conclusions I or II follows

   Answer: C

Instructions
For the following questions answer them individually

Question 46

Which of the answer figures is exactly the mirror image of the given figure, when the mirror is held on the ling AB?

Question figure:

A

B

C

D

   Answer: C

Question 47

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in the two matrices given below. The columns and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, eg. 'A' can be represented by 13, 76, etc., and 'G' can be represented by 22, 65, etc. Similarly, you have ta identify the set for the word 'PUBLIC'.

Matrix I

	0	1	2	3	4
0	A	U	O	T	B
1	T	E	P	A	W
2	R	M	G	G	I
3	U	M	M	C	L
4	P	L	N	E	C

Matrix II

	5	6	7	8	9
5	P	T	A	M	E
6	G	I	O	T	M
7	E	A	L	T	M
8	R	A	B	L	T
9	N	I	E	G	P

A　12, 30, 87, 41, 66, 83

B　99, 30, 87, 77, 23, 44

C　55, 01, 87, 98, 34, 87

D　40, 30, 87, 89, 24, 43

Answer: A

Question 48

Components of which of the answer figures will exactly make up the question figure given below.

Question figure:

A

B

C

D
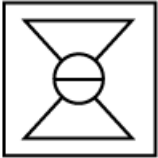
Answer: D

Question 49

Select the answer figure in which the question figure is hidden/embedded

Question figure:

A

B

C

D

Answer: B

Question 50

A piece of paper is folded and punched as shown below in the question figure. From the given answer figures, indicate how it will appear when opened ?

Question figure:

A

B

C

D
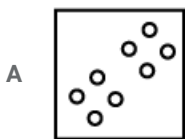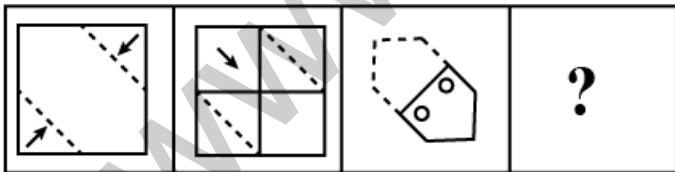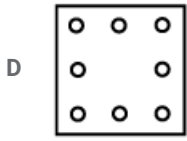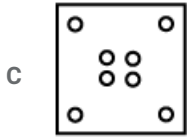
Answer: A

General Awareness

Instructions

For the following questions answer them individually

Question 51

Who was the first economist to have coined the terms "Micro Economics" and "Macro Economics" ?

A   Milton Friedman

B   Ragnar Frisch

C   J.M. Keynes
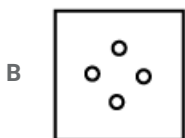
D   Paul Samuelson

   Answer: B

Question 52

In a free enterprise economy, the decision on what shall be produced is made by

A   Demand

B   Income

C   Price mechanism

D   Cost

   Answer: C

Question 53

The main reabon for the high growth of money supply im India since 1970 has been the rise in

A   Foreign lending

B   Foreign borrowing

C   RBI credit to the government

D   Bank credit to the private sector

   Answer: D

Question 54

Who was the firat Muslim to be elected as President of the Indian National Congress ?

A   Syed Ahmad Khan

B   Agha Khan

C   Muhammad Ali Jinnah

D   Badruddin Tyabji

   Answer: D

Question 55

Which of the following was mot known to the Rigvedic period ?

A   Joint family system

B   Agriculture

C   Marriage system

D   Varna system

   Answer: D

Question 56

The characteristic feature of democratic socalism is

A   Privatization

B   Liberalization

C   Nationalization

D   Socialization

   Answer: C

Question 57

If a group of rich people use power for their selfish goals, it is called as

A   Monarchy

B   Oligarchy

C   Polity

D   Democracy

   Answer: B

Question 58

Who said that "Man is born free and everywhere he is in chains"

A   Locke

B   Aristotle

C   Marx

D   Rousseau

  Answer: D

Question 59

A civil servant in India may exercise poliliberty by

A   joining any political party

B   contesting in the elections

C   criticizing the government

D   exercising his franchise

  Answer: D

Question 60

The term 'Law' used in the pharse 'Rule of Law' refers to

A   Positive law

B   Natural law

C   Common law

D   Conventions of the Constitution

  Answer: C

Question 61

The total physical product per unit of a variable input is known as

A   Average product

B   Average returne

C   Average physical product

D   Average revenue

  Answer: C

Question 62

The discount on price when a large quantity is purchased is known as

A   Volume discount

B   Maximum discount

C   Minimum discount

D   Marginal discount

  Answer: A

Question 63

What type of fruit is pineapple?

A Siliqua

B Sorosis

C Syconus

D Samara

   Answer: B

Question 64

Strobilus is a structure associated with

A Pea

B Potato

C Pinus

D Palm

   Answer: C

Question 65

Signet-ring is seen in the life cycle of

A Mosquito

B Plasmodium

C Entamoeba

D Giardia

   Answer: B

Question 66

The number of occipital condyles in man is

A One

B Two

C Three

D Four

   Answer: B

Question 67

Migratory larvae of Ascaris produce symptoms of pneumonia. This is known as

A Down's syndrome

B Klinefelter's syndrome

C Turner's syndrome

D Loeffler's syndrome

Answer: D

Question 68

Which of the following animals is an osmoconformer ?

A Hagfish

B Seal

C Whale

D Rohu

Answer: A

Question 69

Which one of the following is the source of Solar energy ?

A Nuclear fission

B Nuclear fusion

C Artificial radioactivity

D X-ray emission

Answer: B

Question 70

Who, for the first time, successfully determined the charge of an electron ?

A Thomson

B Millikan

C Rutherford

D Coulomb

Answer: B

Question 71

The first Muslim king who invaded South India was

A Balban

B Mohammad bin Tughlaq

C Babar

D Alauddin Khijli

Answer: D

Question 72

The Great Bath was located in

A   Harappa

B   Mohenjodaro

C   Lothal

D   Kalibangan

   Answer: B

Question 73

The Mughal judicial system was based on

A   Persian law

B   Hebrew law

C   Islamic law

D   Indian law

   Answer: C

Question 74

Hurricanes are generally

A   active over the land

B   travelling in families

C   dust storms

D   active over the sea

   Answer: A

Question 75

Orinoco oil belt is in

A   Dubai

B   Saudi Arabia

C   Venezuela

D   Brazil

   Answer: C

Question 76

The highest peak in Africa is

A   Aconcagua

B   Kilimanjaro

C   McKinley

D   Mount Elbrus

   Answer: B

Question 77

A layer of the Earth made up of mixed metals and silicates is called

A   Sial

B   Sima

C   Mantle

D   Nife

   Answer: C

Question 78

The exhaustion of soil fertility is the result of

A   Cover cropping

B   Multiple cropping

C   Rotation cropping

D   Over cropping

   Answer: D

Question 79

Injection of weakened microbes to confer resistance to a disease is known as

A   Transfusion

B   Vaccination

C   Inoculation

D   Intimation

   Answer: B

Question 80

Who, among the following, is the author of 'Das-Kapital'

A   Rousseau

B   Karl Marx

C   Chanakya

D   Montesquieu

   Answer: B

Question 81

When and where will the next Olympics be held ?

A　Beijing, 2014

B　Shanghai, 2012

C　Rio-de-Janeiro, 2016

D　Taiwan, 2013

　Answer: C

Question 82

A Persian form of singing a poem is called

A　Ghazal

B　Qawali

C　Thumri

D　Bhajan

　Answer: A

Question 83

Green-house effect causes

A　increase of temperature

B　increase of moisture in air

C　decrease of temperature

D　decrease of moisture in air

　Answer: A

Question 84

The advantages of rain-water harvesting is that it

A　helps in reducing floods

B　increases the ground water level

C　cause more rains

D　reduces floods and replenishes ground water

　Answer: D

Question 85

The 'solder' used for connecting electronic circuits consists of

A　Lead and Tin

B　Tin and Iron

C　Copper and Lead

D   Lead and Aluminium

    Answer: A

Question 86

What type of molecular motion is responsible for heat conduction ?

A   Translational

B   Vibrational

C   Rotational

D   Spin

    Answer: B

Question 87

Pick the odd one out.

A   Compiler

B   Interpreter

C   Assembler

D   Word processor

    Answer: D

Question 88

MS-Office ia an example of ....

A   an operational system

B   a telecommunication software

C   a programming language

D   a productivity software

    Answer: D

Question 89

In India, the day 5th September is celebrated as Teacher's Day to honour the birthday of

A   Rabindra Nath Tagore

B   Dr. S. Radhakrishnan

C   Dr. Rajendra Prasad

D   Mrs. Indira Gandhi

    Answer: B

Question 90

Which among the following polluting agents is responsible for creating a bole in the ozone layer ?

A CO

B CFC

C SO_2

D CH_4

Answer: B

Question 91

Fly ash is

A CO_2

B Organic particulate matter

C Small ash particles

D NO_X

Answer: C

Question 92

Addition of chlorine to raw water before treatment is known as

A Plain chlorination

B Post-chlorination

C Pre-chlorination

D Super-chlorination

Answer: C

Question 93

Which of the following is not a water treatment technique ?

A Reverse osmosis

B Ion exchange

C Electro-dialysis

D Electrostatic precipitation

Answer: D

Question 94

Which one of the following is m major indoor air pollutantin India ?

A Ozone

B Peroxy Acetyl Nitrite (PAN)

C Carbon monoxide

D   Sulphur dioxide

   Answer: C

Question 95

Multi Drug Therapy is for the infection of

A   Leprosy

B   AIDS

C   Cholera

D   Hepatitis

   Answer: A

Question 96

Volvo, the car manufacturing company, introduced

A   Alarm

B   Fog light

C   Seat belts

D   Rear view mirrors

   Answer: C

Question 97

The Dark Continent is

A   Asia

B   Australia

C   Africa

D   Europe

   Answer: C

Question 98

The major constitution of air is

A   Nitrogen

B   Carbon dioxide

C   Oxygen

D   Hydrogen

   Answer: A

Question 99

The souring of milk to curd is an example of

A Saponification

B Putrefaction

C Fermentation

D Esterfication

   Answer: C

Question 100

Which one of the following compounds is formed when formaldehyde is treated with Grignard reagent ?

A Primary alcohol

B Secondary alcohol

C Tertitary alcohol

D Dihydric alcohol

   Answer: A

General Engineering (Mechanical)

Instructions
For the following questions answer them individually

Question 101

Which of the following statements is not true for couplings ?

A Couplings are meant for transmitting torque

B Couplings keep the mating shafts in alignment

C Couplings are used in shafts

D Couplings connect parallel shafts

   Answer: D

Question 102

The sum of the tensions when the belt is running on the pulley is

A less than the initial tension

B More than the initial tension

C More than twice the initial tension

D Half the initial tension

   Answer: C

Question 103

A steel bar is fixed at both ends. If the bar is heated, it will develop

A Compressive stress

B   Tensile stress

C   Bending stress

D   None of the above

   Answer: A

Question 104

For a screw, the angle of helix (α) is related to the lead (L) and mean screw thread diameter (d) as

A $\tan\alpha = \frac{L}{d}$

B $\tan\alpha = \frac{d}{L}$

C $\tan\alpha = \frac{L}{\pi d}$

D $\tan\alpha = \frac{\pi d}{L}$

   Answer: C

Question 105

A slider crank chain is a four bar linkage consisting of

A   One sliding pair and two turning pairs

B   One sliding pair and three turning pairs

C   Two sliding pairs and two rotating pairs

D   Two sliding pairs and two turning pairs

   Answer: B

Question 106

In wheel and differential axle, the velocity ratio is given by

A $\frac{d_1\ d_2}{2D}$

B $\frac{d_1\ d_2}{4D}$

C $\frac{2D}{d_1\ d_2}$

D $\frac{4D}{d_1\ d_2}$

   Answer: C

Question 107

Acme threads are generally used in

A   Railway carriage couplings

B   Spindles of bench vices

C   Screw cutting lathes

D   Feed mechanism of machine tools

    Answer: C

Question 108

In a hartnell governor, 800 N force is exerted on the sleeve at minimum radius and 1200 N force is exerted at minimum radius. If slleve lift is 20 mm, the value of spring stiffness (S) is

A   10 N/mm

B   20 N/mm

C   15 N/mm

D   18 N/mm

    Answer: B

Question 109

The minimum and minimum speeds of a flywheel during a cycle are $N_1 \ and \ N_2$ r.p.m. respectively. The coefficient of steadiness of the flywheel is

A $\dfrac{(N_1 \quad N_2)}{(N_1 \quad N_2)}$

B $\dfrac{(N_1 \quad N_2)}{2(N_1 \quad N_2)}$

C $\dfrac{2(N_1 \quad N_2)}{(N_1 \quad N_2)}$

D $\dfrac{(N_1 \quad N_2)}{(N_1 \quad N_2)}$

    Answer: B

Question 110

The angle of vee belts is

A $15°$

B $30°$

C $40°$

D $45°$

    Answer: D

Question 111

A point on a link connecting double slider crank chain traces a/an

A   Straight line path

B   Circular Path

C   Parabolic path

D   Elliptical path

Answer: D

Question 112

The angular speed of a wall's governor, when its height is 20 cm, will be equal to

A   20 rad/sec

B   10 rad/sec

C   6 rad/sec

D   7 rad/sec

Answer: D

Question 113

The efficiency in case of worm gear drives is generally in the range of

A   10-25 percent

B   40-60 percent

C   50-70 percent

D   70-85 percent

Answer: C

Question 114

In a kinematic chain, the minimum number of kinematic pairs required is

A   one

B   two

C   three

D   four

Answer: D

Question 115

For a key to be equally strong in shearing and crushing, the width of the key, assuming that the allowable crushing stress is twice the allowable shear stress, should be

A   2.5 times its thickness

B   2 times its thickness

C   1.5 times its thickness

D   equal to its thickness

Answer: D

Question 116

Tension in the tight side of a belt drive is 100 N and that in the slack side 60 N. If the belt breadth is 10 cm and thickness 4 cm, what is the maximum stress induced in the belt?

A $2.5\,\text{N/cm}^2$

B $1.5\,\text{N/cm}^2$

C $4\,\text{N/cm}^2$

D $2\,\text{N/cm}^2$

   Answer: A

Question 117

If two shafts of the same length, one of width is hollow, transmit equal torques and have equal maximum stress, then they should have equal

A   Polar moment of inertia

B   Polar modulus of section

C   Diameter

D   Angle of twist

   Answer: B

Question 118

In case of cantilever, irrespective of the type of loading the maximum bending moment and maximum shear force occur at

A   Fixed end

B   Free end

C   Middle

D   Any point

   Answer: A

Question 119

Ratio of moment of inertia of a circle and that of a square having same area about their centroidal axis is

A $\frac{3}{\pi}$

B $\frac{3}{2\pi}$

C $\frac{4}{\pi}$

D $\frac{5}{9\pi}$

   Answer: A

Question 120

A circular shaft can transmit a torque of 13 KN-m. If the torque is reduced to 12 kN-m, then the maximum value of bending moment that can be applied to the shaft is

A   1 kN-m

B   3 kN-m

C   5 kN-m

D   7 kN-m

   Answer: C

Question 121

Assertion (A) : The preferred cross-section of a beam subjected to transverse loading is I section.
Reason (R) : Section Modulus of I section is low

A   Both A and R are true and R is a correct explanation of A

B   Both A and R are true and R is not a correct explanation of A

C   A is true but R is false

D   R is true but A is false

   Answer: C

Question 122

The value of Poisson's Ratio is always less than

A   1

B   0.2

C   0.4

D   0.5

   Answer: D

Question 123

The spindle of a machine tool is subjected to the following type of load:

A   Torsional load

B   Bending load

C   Axial compressive load
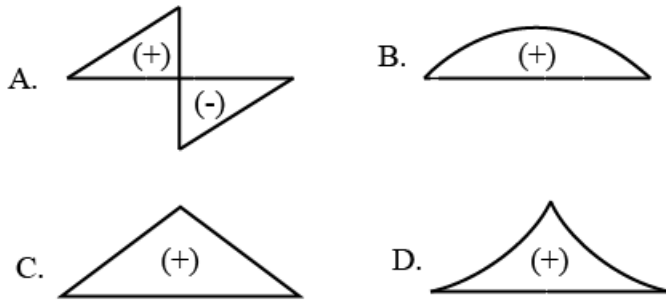
D   Axial tensile load

   Answer: A

Question 124

The cross-section of a member is subjected to a uniform shear. The strain energy stored per unit volume is equal to (G = modulus of rigidity)

A $\dfrac{2\tau^2}{G}$

B $\dfrac{\tau^2}{2G}$

C $\dfrac{\tau^2}{4G}$

D $\dfrac{\tau^2}{G}$

    Answer: B

Question 125

Figures A,B,C and D are bending moment distribution of a simply supported beam for some particular shear stress distribution. which figure is the correct bending moment diagram corresponding to the shear stress distribution given below :

A   A is correct bending moment distribution

B   B is correct bending moment distribution

C   C is correct bending moment distribution

D   D is correct bending moment distribution

    Answer: C

Question 126

A uniform simply supported beam of span (l) carries a point load (W) at the Centre. The downward deflection at the centre will be

A $\dfrac{Wl^2}{8EI}$

B $\dfrac{Wl^3}{8EI}$

C $5\dfrac{Wl^2}{384EI}$

D $\dfrac{Wl^3}{48EI}$

    Answer: C

Question 127

The power transmitted by a circular shaft rotating at N rpm under action of Torque T is:

A $\dfrac{2\pi NT}{750}$

B $\dfrac{2\pi NT}{60}$

C $\dfrac{2\pi NT}{450}$

D $\dfrac{2\pi NT}{4500}$

    Answer: B

Question 128

A cylinder is said to be thin if the thickness to diameter ratio is less than

A $\frac{1}{5}$

B $\frac{1}{10}$

C $\frac{1}{15}$

D $\frac{1}{20}$

   Answer: D

Question 129

The bending moment on a section is maximum where shearing force is

A   Minimum

B   Maximum

C   Zero

D   Changing sign

   Answer: C

Question 130

Strut is defined as a

A   Member of a structure which carries a tensile load

B   Member of a structure which carries an axial compressive load

C   Vertical Member of a structure which carries a tensile load

D   Vertical Member of a structure which carries no load

   Answer: B

Question 131

The expression $\int_{1}^{2} pdV$ gives the measure of work done during

A   Steady flow reversible process

B   Non-flow reversible process

C   Open system and any process

D   Any system and any process

   Answer: B

Question 132

What approximate percentage of heat of combustion is lost to the jacket cooling water?

A   5 %

B   10 %

C   15 %

D   25 %

    Answer: D

Question 133

If two liquids at different temperatures are mixed, then the final temperature of the mixture of liquids can be obtained by using

A   Zeroth law of thermodynamics

B   First law of thermodynamics

C   Second law of thermodynamics

D   Third law of thermodynamics

    Answer: C

Question 134

For an irreversible thermodynamics cycle

A $\int \frac{dQ}{T} > 0$

B $\int \frac{dQ}{T} < 0$

C $\int \frac{dQ}{T} \geq 0$

D $\int \frac{dQ}{T} \leq 0$

    Answer: B

Question 135

The enthalpy of evaporation of water

A   Decreases with increase in pressure

B   Decreases with decrease in pressure

C   Increases with increase in pressure

D   Remain unaffected by change in pressure

    Answer: A

Question 136

In a throttling process, the following thermodynamic property remains consonant:

A   Enthalpy

B   Entropy

C   Specific heat

D   Energy

Answer: A

Question 137

Heat supplied to a system equals the work done in case of non-flow process carried out

A Isochorically

B Isobarically

C Isothermally

D Adiabatically

Answer: C

Question 138

Neglecting changes in potential and kinetic energies, the shaft work during a steady flow process is given by

A $\int \rho dv$

B $\int v d\rho$

C $\int T ds$

D $\int S dT$

Answer: B

Question 139

Which property is an intensive property of the system?

A Specific enthalpy

B Volume

C Kinetic energy

D Entropy

Answer: A

Question 140

One of the extensive properties of a thermodynamic system amongst the following is

A Pressure

B Volume

C Temperature

D Density

Answer: B

Question 141

A heat engine is supplied with 278 kW of heat at a constant fixed temperature of $283°$C and the heat rejection takes place at $5°$C.
The engine is reversible
if the heat rejected, in kW, is

A 139

B 208

C 35

D 70

   Answer: A

Question 142

Function of carburetor is to supply

A Air and petrol mixture

B Air and diesel mixture

C Only petrol

D Petrol and diesel mixture

   Answer: A

Question 143

In a boiler, the feed check valve is used to

A Control the feed water flow rate

B Check the water level in drum

C Ensure unidirectional feed flow to drum

D Check quality of feed water

   Answer: C

Question 144

When wet steam flows through a throttle valve

A Its temperature increases and dryness improves

B Its temperature increases but dryness decreases

C Its temperature decreases and dryness improves

D Its temperature and dryness decreases

   Answer: C

Question 145

In internal combustion engine terminology, MPFI stands for

A Multi pressure Fuel Injection

B Multi Point Fired Ignition

C Multi Point Fuel Injection

D   Multi Pressure Fired Ignition

Answer: C

Question 146

For complete burning of 1 kg of carbon, the air required will be about

A   2.67 kg

B   12.7 kg

C   11.6 kg

D   14.5 kg

Answer: C

Question 147

1ton of refrigeration is equivalent to

A   1 kW

B   2.5 kW

C   3.5 kW

D   5 kW

Answer: C

Question 148

Knocking tendency in an SI engine reduces with increasing

A   Compression ratio

B   Wall temperature

C   Supercharging

D   Engine speed

Answer: D

Question 149

Centane number of a fual is a measure of its

A   Viscosity

B   Volatility

C   Ignition quality

D   API specific gravity

Answer: C

Question 150

Critical pressure for steam is

A 252 bar

B 225 bar

C 184 bar

D 163 bar

    Answer: B

Question 151

Maximum steam pressure (in bar) in a locomotive boiler is limited to

A 5

B 10

C 18

D 25

    Answer: C

Question 152

Compounding of steam turbine is done to

A Balance the rotor

B Reduce the blade friction

C Reduce the rotor speed

D Connect the shaft of one turbine to that of another

    Answer: C

Question 153

In diesel engine, the suction contains

A Air only

B Fuel only

C Mixture of air and fuel

D Air or fuel

    Answer: A

Question 154

The fluid drawn in during suction in petrol engine contains

A Fuel only

B Fuel or air

C Air only

D   Mixture of air and fuel

   Answer: D

Question 155

Spark ignition engine is

A   Petrol engine

B   Diesel engine

C   Steam engine

D   C.I. engine

   Answer: A

Question 156

The working fluid for a diesel engine during the suction stroke is

A   Fuel-air mixture

B   Fresh air

C   Products of combustion

D   None of the above

   Answer: B

Question 157

For a convergent nozzle, If the exit pressure is less than critical pressure, the mass rate of flow will be

A   Increasing

B   Decreasing

C   Zero

D   Constant

   Answer: D

Question 158

In Impulse turbine, pressure on the two sides of the moving blades

A   Increases

B   Decreases

C   Remain same

D   May decrease or remain constant

   Answer: C

Question 159

Brayton cycle is a reversed

A   Carnot cycle

B   Rankine cycle

C   Joule cycle

D   Dual cycle

   Answer: C

Question 160

For the same maximum pressure and peak temperature, which cycle will be most efficient?

A   Diesel

B   Dual combustion

C   Otto

D   None of the above

   Answer: A

Question 161

An ideal fluid

A   Has no viscosity

B   Satisfies the relation pv   RT

C   Obeys Newton s Law of viscosity

D   is both incompressible and non-viscous

   Answer: D

Question 162

For small discharge at high pressure following pump is preferred:

A   Mixed flow

B   Reciprocating

C   Axial flow

D   Centrifugal

   Answer: B

Question 163

In a reaction Turbine

A   Flow can be regulated without loss

B   Water may be allowed to enter a part or whole of wheel circumference

C   The outlet must be above the tail race

D   There is only partial conversion of available head to velocity head before entry to runner

Answer: D

Question 164

Impulse Turbine is generally fitted

A   Little above the tail race

B   At the level of the tail race

C   Slightly below the tail race

D   About 2.5 meters below the tail race

Answer: A

Question 165

In general, the vanes of a centrifugal pump are

A   Curved forward

B   Curved backward

C   Radial

D   Twisted

Answer: B

Question 166

Francis Turbine is best suited for

A   All type of heads

B   Medium head application from 24 to 180 m

C   Low head installations up to 30 m

D   High head installations above 180 m

Answer: B

Question 167

Head developed by a centrifugal pump depends on

A   Impeller diameter

B   Speed

C   Type of casing

D   (A) & (B)

Answer: D

Question 168

The vertical distance of the center of pressure below the c.g. of the inclined plane area (submerged in liquid) is

A $\dfrac{I_{c.g.}\,\mathrm{s\,n}^2\theta}{AX}$

B $\dfrac{I_{c.g.}\cos^2\theta}{AX}$

C $\dfrac{I_{c.g.}\,\mathrm{s\,n}^2\theta}{X}$

D $\dfrac{I_{c.g.}\cos^2\theta}{X}$

     Answer: A

Question 169

For a nozzle to convert subsonic flow into a supersonic flow, it must be

A   Convergent type

B   Divergent type

C   Convergent-Divergent type

D   Of uniform cross-sectional area

     Answer: C

Question 170

liquid moving with constant angular momentum has tangential velocity of 1.2 $\frac{m}{s}$ 3 m from axis of rotation. The tangential velocity at 1.5m from axis of rotation, in $\frac{m}{s}$ is

A   0.6

B   3.75

C   5.4

D   6.0

     Answer: A

Question 171

With the same cross-sectional area and placed in the turbulent flow, the largest drag will be experienced by

A   A sphere

B   A streamlined body

C   A circular disc held normal to the flow direction

D   A circular disc held parallel to the flow direction

     Answer: C

Question 172

A streamlined body is such that

A   It produces no drag for flow around it

B   It is symmetrical about the axis along the free stream

C   Separation of flow is avoided along its surface

D   The shape of the body coincides with the stream surface

    Answer: D

Question 173

Pascal second is the unit of

A   Pressure

B   Kinematic viscosity

C   Dynamic viscosity

D   Surface tension

    Answer: C

Question 174

The shear stress in a turbulent pipe flow

A   Varies parabolically with radius

B   is constant over the pipe radius

C   Varies according to the $\frac{1}{7}$th power law

D   Is zero at the center and increases linearly to the wall

    Answer: D

Question 175

A rectangular tank of square cross-section (2m × 2m) and height 4 m is completely filled up with a liquid. The ratio of total hydrostatic force on any vertical wall to its bottom is

A   2.0

B   1.5

C   1.0

D   0.5

    Answer: C

Question 176

Air vessel is used in a reciprocating pump to obtain

A   Reduction of suction head

B   Rise in delivery head

C   Continuous supply of water at uniform rate

D   Increases in supply of water

Answer: C

Question 177

Shear stress in a turbulent flow is due to

A   Viscous property of the fluid

B   Fluid density

C   Fluctuation of velocity in the direction of flow

D   Fluctuation of velocity in the direction of flow as well as transverse to it

Answer: D

Question 178

The discharge through a single acting reciprocating pump is (N-rpm)

A $Q = ALN$

B $Q = \dfrac{ALN}{60}$

C $Q = \dfrac{2ALN}{60}$
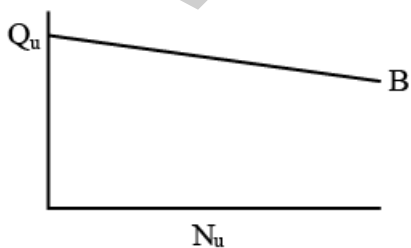
D $Q = 2ALN$

Answer: B

Question 179

For viscous flow between two parallel plates, the pressure drop per unit length is equal to

A $12\dfrac{\mu UL}{egD^2}$

B $12\dfrac{\mu U}{D^2}$

C $12\dfrac{\mu UL}{D^2}$

D $32\dfrac{\mu UL}{D^2}$

Answer: D

Question 180

The unit discharge Q_u and unit speed N_u curve for a turbine is shown in figure, curve B is for

A   Francis turbine

B   Kaplan turbine

C Pelton turbine

D Propeller turbine

   Answer: A

Question 181

Permeability is poor for

A Fine grains

B Medium grains

C Coarse grains

D Rounded grains

   Answer: A

Question 182

Dies for wire drawing are made of

A Cast stee

B Cast Iron

C Carbides

D Wrought Iron

   Answer: C

Question 183

In thermit welding, aluminium and Ironoxide are mixed in the proportion of

A 1 : 3

B 1: 2

C 1: 1

D 2: 1

   Answer: A

Question 184

Metal patterns are used for

A Small castings

B Large castings

C Precise and intricate castings

D Large scale production of castings

   Answer: D

Question 185

In order to get the uniform thickness of the plate by rolling process, one provides

A Camber on the rolls

B Offset on the rolls

C Hardening of the rolls

D Antifriction bearing

    Answer: A

Question 186

The most important requisite of a cutting tool material is

A Carbon percentage

B Percentage of alloying element

C Red (hot) hardness

D Easy Fabrication

    Answer: C

Question 187

The Soldering process is carried out in the temperature range

A $15 - 60°$

B $70 - 150°$

C $180 - 250°$

D $300 - 500°$

    Answer: C

Question 188

In electrical resistance welding, both heat and pressure are used to effect coalescence. The pressure necessary to effect the weld varies from

A 50-100 kgf/cm^2

B 100-200 kgf/cm^2

C 250-500 kgf/cm^2

D 500-850 kgf/cm^2

    Answer: C

Question 189

The angle between the face and the flank of the single point cutting tool is known as

A Rake angle

B   Clearance angle

C   Lip angle

D   Side angle

   Answer: A

Question 190

The commonly used flux for Brazing is

A   Slag

B   Borax

C   Lead

D   Calcium chloride

   Answer: B

Question 191

Blanking and piercing operations can be performed simultaneously in

A   Simple die

B   Compound die

C   Progressive die

D   Combination die

   Answer: C

Question 192

If electrical current is passed through the metals to be joined and heated to the plastic state and weld is completed by the application of pressure, the welding is known as

A   Forge weld

B   Electric arc welding

C   Resistance welding

D   Thermit welding with pressure

   Answer: C

Question 193

In case of shaper, for finish machining, the practice is to use

A   Maximum feeds at high speeds

B   Maximum feeds at slow speeds

C   Minimum feeds at slow speeds

D   Minimum feeds at high speeds

Answer: D

Question 194

In which milling operation, is the surface finish better?

A   Climb

B   Down

C   Conventional

D   Face

Answer: A

Question 195

Tool signature comprises of how many elements?

A   5

B   7

C   9

D   11

Answer: B

Question 196

A half nut is

A   nut manufactured in parts

B   Nut with half the standard pitch

C   A double start nut for a quick shaft

D   Mechanism that locks the lathe carriage to the lead screw for thread cutting

Answer: D

Question 197

Automobile gears are generally manufactured by

A   Hobbing

B   Stamping

C   Extrusion

D   Rolling

Answer: A

Question 198

Spot welding is most suitable for joining parts having thickness up to

A 50 mm

B 30 mm

C 20 mm

D 10 mm

   Answer: D

Question 199

Thermit welding differs from other methods of welding in that

A It does not use heat

B It is less time consuming

C It does not require electrodes

D It employs exothermic chemical reaction for developing high temperature

   Answer: D

Question 200

The binder in case of synthetic sand used for moulding is

A Clay

B Molasses

C Water

D Bentonite and water

   Answer: D

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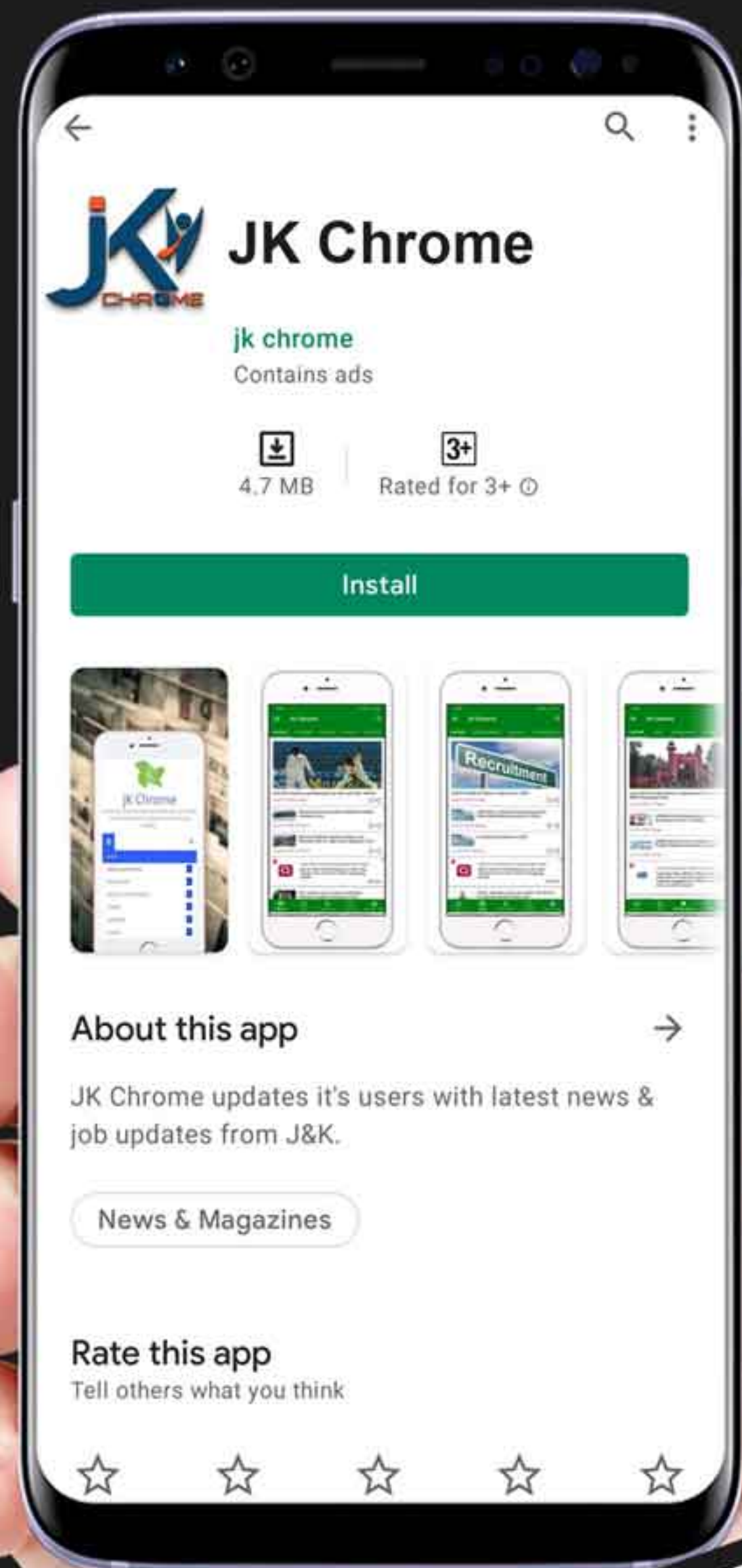Employment News
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