Prepp

Your Personal Exams Guide

NDA	CDS	SSC CGL	CBSE UGC NET
IAS	SSC CHSL	CTET	MPSC
AFCAT	CSIR UDC NET	IBPS PO	UP POLICE
SSC MTS	SBI PO	BPSC	UPTET
IBPS RRB	IBPS CLERK	IES	UPSC CAPF
SSC Stenogr..	RRB NTPC	SSC GD	RBI GRADE B
RBI Assistant	DSSSB		

SSC JE ME 2016 Paper 1 Question Paper (02-Mar-2017) (Shift 2)

Total Time: 2 Hour
Total Marks: 200

Instructions

Sl No.	Section Name	No. of Question	Maximum Marks
1	General Intelligence and Reasoning	50	50
2	General Awareness	50	50
3	General Engineering	100	100

1.) A total of 120 minutes is allotted for the examination.

2.) The server will set your clock for you. In the top right corner of your screen, a countdown timer will display the remaining time for you to complete the exam. Once the timer reaches zero, the examination will end automatically. The paper need not be submitted when your timer reaches zero.

3.) There will, however, be sectional timing for this exam. You will have to complete each section within the specified time limit. Before moving on to the next section, you must complete the current one within the time limits.

General Intelligence and Reasoning

1. Select the related word/letters/number from the given alternatives.   (+1, -0.25)

   Red : Colour :: French : ?

   a. foreign

   b. language

   c. European

   d. Country

---

2. Select the related word/letters/number from the given alternatives.   (+1, -0.25)

   Chips : Potatoes :: Soda : ?

   a. Fizz

   b. Bottle

   c. Lemon

   d. Water

---

3. Select the related word/letters/number from the given alternatives.   (+1, -0.25)

   Quadrilateral : Four :: ?

   a. Cylinder : Circle

   b. Cube : Square

   c. Triangle : 180

   d. Hexagon : Six

---

4. Select the related word/letters/number from the given alternatives.   (+1, -0.25)

FGI : HIK :: STV : ?

a. UVW

b. VWY

c. XYZ

d. UVX

---

5. Select the related word/letters/number from the given alternatives. **(+1, -0.25)**

Dream : Area :: Frame : ?

a. Farmer

b. Ear

c. Fare

d. Freer

---

6. Select the related word/letters/number from the given alternatives. **(+1, -0.25)**

Brine : Inert :: Beware : ?

a. Arenas

b. Declare

c. Spare

d. Area

---

7. Select the related word/letters/number from the given alternatives. **(+1, -0.25)**

169 : 13 :: 225 : ?

a. 22

b. 25

c. 20

d. 15

---

8. Select the related word/letters/number from the given alternatives.   **(+1, -0.25)**

159 : 840 :: 345 : ?

a. 654

b. 765

c. 876

d. 987

---

9. Select the related word/letters/number from the given alternatives.   **(+1, -0.25)**

761 : 928 :: 651 : ?

a. 765

b. 753

c. 807

d. 951

---

10. Select the odd word/letters/number/word pair/number pair from the given   **(+1, -0.25)**
    alternatives.

a. kilometres

b. feet

c. grams

d. micrometres

---

11. Select the odd word/letters/number/word pair/number pair from the given alternatives. **(+1, -0.25)**

    a. pros and cons

    b. dead or alive

    c. null and void

    d. sooner or later

---

12. Select the odd word/letters/number/word pair/number pair from the given alternatives. **(+1, -0.25)**

    a. Crayon and Marker

    b. Pen and Eraser

    c. Book and Diary

    d. Pen and Marker

---

13. Select the odd word/letters/number/word pair/number pair from the given alternatives. **(+1, -0.25)**

    a. OU

    b. YC

    c. IA

    d. EO

---

14. Select the odd word/letters/number/word pair/number pair from the given alternatives. **(+1, -0.25)**

    a. Cuisine

    b. Business

c. Disinterested

d. Noisiness

---

15. Select the odd word/letters/number/word pair/number pair from the given alternatives.   **(+1, -0.25)**

    a. DRGK

    b. WMUI

    c. OHAU

    d. XHTV

---

16. Select the odd word/letters/number/word pair/number pair from the given alternatives.   **(+1, -0.25)**

    a. 7531

    b. 2468

    c. 9753

    d. 8642

---

17. Select the odd word/letters/number/word pair/number pair from the given alternatives.   **(+1, -0.25)**

    a. 15

    b. 25

    c. 53

    d. 45

---

18. Select the odd word/letters/number/word pair/number pair from the given alternatives.   (+1, -0.25)

   a. 108, 132

   b. 114, 156

   c. 136, 152

   d. 120, 138

---

19. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.   (+1, -0.25)

   Cremation, Accolade, Maestro, Chrome, ?

   a. Very

   b. Zebra

   c. Virtual

   d. Time

---

20. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.   (+1, -0.25)

   Toxic, Icon, Onto, Tomorrow,?

   a. Owl

   b. Wet

   c. Rat

   d. Borrow

---

21. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.   (+1, -0.25)

age, dire, genre, stumpy, ?

   a. splayed

   b. secretes

   c. preacher

   d. shooed

---

22. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.   **(+1, -0.25)**

L, J, H, F, ?

   a. E

   b. G

   c. D

   d. I

---

23. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.   **(+1, -0.25)**

eca, fdb, gec, hfd, ?

   a. ige

   b. ieg

   c. gei

   d. egi

---

24. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.   **(+1, -0.25)**

XXXXOXO, XXXXOOX, XXXXOOX, XXXOXOX, ?

a. XOXXOXX

b. XXXXOXO

c. XXXXOOX

d. XXOXXOX

---

25. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.

    (+1, -0.25)

    -2, 1, 5, ?, 16

    a. 9

    b. 10

    c. 11

    d. 13

---

26. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.

    (+1, -0.25)

    -10/3, ?, -2/3, 2/3, 2

    a. -2

    b. 2

    c. -1/3

    d. 1/3

---

27. In the given series one word/one term/one number is missing. Select the correct alternative from the given ones that will complete the series.

    (+1, -0.25)

    23, 29, ?, 37, 41

    a. 30

b. 33

c. 31

d. 35

---

28. If a < b, d > c and a < d, which of the following is true?   (+1, -0.25)

I. b < c

II. c > a

a. Only I

b. Neither I nor II

c. Only II

d. Both I and II

---

29. The weights of five boxes are 10, 30, 40, 70 & 70 kilograms. Which of the following   (+1, -0.25)
cannot be the total weight (in kilograms) of any combination of these boxes?

a. 190

b. 180

c. 210

d. 200

---

30. If the letters Q, B, T, A, U, E & N are numbered 1, 2, 3, 4, 5, 6 & 7 respectively. Select that   (+1, -0.25)
combination of numbers so that letters arranged accordingly, form a meaningful
word.

a. 5617312

b. 5447134

c. 2471563

d. 3242637

---

31. If PROXIMAL is coded as KILCRNZO, then how will WHY be coded as?   (+1, -0.25)

    a. DSB

    b. EDC

    c. CDE

    d. BNM

---

32. In a certain code language, 531 means 'boy is shy', 346 means 'girl is bold', 256 means 'shy or bold'. Find the code for 'or'.   (+1, -0.25)

    a. 1

    b. 2

    c. 3

    d. 5

---

33. In a certain code language, '+' represents 'x', '−' represents '+', 'x' represents '÷' and '÷' represents '−'. Find out the answer to the following question.   (+1, -0.25)

0.1 + 500 − 240 × 6 = ?

    a. 90

    b. 10

    c. 1.25

    d. 108

---

34. If A @ B means A is father of B, A # B means A is sister of B and A ! B means A is son of B, then what does E @ F ! G # H mean, if H is a male?   (+1, -0.25)

a. H is brother of E

b. H is father of E

c. H is son of E

d. H is E's wife's brother

---

35. If 45@23 = 14, 76@22 = 17, then find the value of 55@10 = ?   (+1, −0.25)

a. 8

b. 11

c. 15

d. 5

---

36. Which of the following words follow the trend of the given list?   (+1, −0.25)

Zonal, Tzars, Wizen, Seize, Waltz, ?

a. Unitize

b. Ablaze

c. Azure

d. Sanza

---

37. Which of the following terms follows the trend of the given list?   (+1, −0.25)

ABC, BCAB, CABCA, _____.

a. BCABCA

b. CABCAB

c. ABCCBA

d. ABCABC

---

38. A girl walks 3 km East starting from her home. She then turns South and walks 2 km, then she turns West and walks 7 km, then she turns to her right and walks 2 km. Where is she now from her starting position?   (+1, −0.25)

   a. 10 km to the West from her home.

   b. 4 km to the East from her home.

   c. 10 km to the East from her home.

   d. 4 km to the West from her home.

---

39. A is standing 6 m to the East of B. A walks 9 m South, then turns to his right and walks 7 m. At the same time, B has walked 3 m West, then he turned South and walked 9 m, then he turned to his left and walked 5 m. Where is B now with respect to the position of A?   (+1, −0.25)

   a. B is 12 m to the East of A

   b. B is 3 m to the West of A

   c. B is 3 m to the East of A

   d. B is 12 m to the West of A

---

40. In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the mentioned statements.   (+1, −0.25)

   Statement 1: All huts are made of mud.

   Statement 2: Things made of mud are not strong.

   Conclusion I: All huts are strong.

   Conclusion II: Mud huts are not strong.

a. Only conclusion I follows

b. Either I or II follows

c. Neither I nor II follows

d. Only conclusion II follows

---

41. In the question a statement is given, followed by two arguments, I and II. You have to consider the statement to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given arguments, if any, is a strong argument.
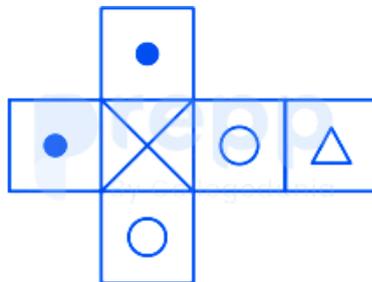
    (+1, −0.25)

    Statement: Should teachers be permitted to cane unruly children?

    Argument I: No, this will teach them that physical violence is an acceptable means of social behaviour.

    Argument II: Yes, children taught in a strict atmosphere are more successful.

    a. only argument II is strong

    b. neither argument I nor II is strong

    c. both argument I and II are strong

    d. only argument I is strong

---

42. Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure?
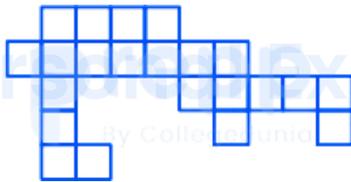
    (+1, −0.25)

a.

b.

c.

d.

43. Which of the following answer figure patterns can be combined to make the question figure? (+1, −0.25)
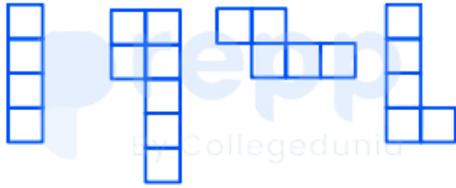
a.

b.

c.

d.

---

44. Which of the following diagrams represent the relationship between Engineers, Software Engineers and Chemical Engineers? **(+1, -0.25)**
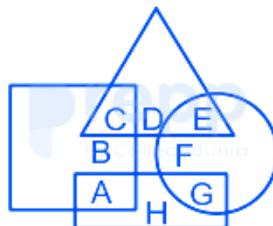
a.

b.

c.

d.

---

45. In the following figure, square represents engineers, triangle represents environmentalists, circle represents lawyers and rectangle represents government officers. Which set of letters represents lawyers who are not environmentalists and government officers who are engineers? **(+1, -0.25)**
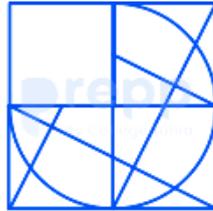

a. E, F and B

b. A, E and F

c. B, A and E

d. G, F and A

---

46. Which answer figure will complete the pattern in the question figure? (+1, −0.25)

a.

b.

c.

d.
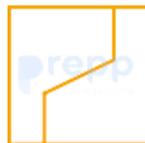
---

47. From the given answer figures, select the one in which the question figure is hidden/embedded. (+1, −0.25)

a.

---

b.

c.

d.

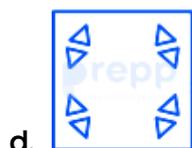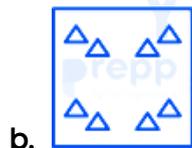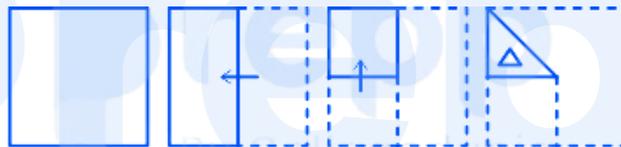
48. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.   **(+1, −0.25)**

a.

b.

c.

d.

---

49. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?   (+1, -0.25)

a.

b.

c.

d.

50. 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 shown in the given two matrices. 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, for example 'N' can be represented by 00, 12 etc and 'C' can be represented by 95, 76 etc. Similarly, you have to identify the set for the word 'TYRES'.   (+1, -0.25)

MATRIX – I

	0	1	2	3	4
0	N	V	P	R	W
1	X	T	N	Y	V
2	Z	P	S	X	Q
3	U	Z	X	W	U
4	Y	Y	R	N	R

MATRIX – II

	5	6	7	8	9
5	J	I	C	E	J
6	G	G	A	L	I
7	F	C	J	K	D
8	E	M	K	J	H
9	C	L	E	A	E

a. 21, 40, 04, 69, 01

b. 12, 13, 41, 55, 69

c. 11, 41, 44, 85, 22

d. 31, 01, 65, 58, 41

General Awareness

51. Which of the following is not a part of the human stomach?   (+1, -0.25)

    a. Cardia

    b. Caecum

    c. Fundus

    d. Pyloric

---

52. Which of the following white blood cells is a type of agranulocytes?   (+1, -0.25)

    a. Neutrophils

    b. Eosinophils

    c. Lymphocytes

    d. Basophils

---

53. Which of the following is an insectivorous plant?   (+1, -0.25)

    a. Pitcher

    b. Alstonia

    c. Calotropis

    d. Eichhornia

---

54. Which of the following represents the correct pathway of water movement in the root?   (+1, -0.25)

    a. Epidermis > Endodermis > Cortex > Pericycle > Xylem

    b. Epidermis > Pericycle > Endodermis > Cortex > Xylem

    c. Epidermis > Cortex > Endodermis > Pericycle > Xylem

d. Epidermis > Pericycle > Cortex > Endodermis > Xylem

---

55. Consider the following pairs. (+1, -0.25)

1. 2-Bromopropane	$(CH_3)_2C=CHCOCH_3$
2. Propan-1-amine	$CH_3-CH_2-CH_2-NH_2$
3. Dichloromethane	CH_2Cl_2
4. 4-Methylpent-3-en-2-one	$CH_3-CHBr-CH_3$

Which of the above pairs are correctly matched?

a. 1 and 4 only

b. 3 and 4 only

c. 2 and 3 only

d. 2, 3 and 4 only

---

56. What is the IUPAC name of Allyl bromide? (+1, -0.25)

a. Dichloromethane

b. Tetrachloromethane

c. 2-Chlorobutane

d. 3-Bromopropene

---

57. Formula for Hexamethylene diamine is _ _ _ _ _ _ _ _. (+1, -0.25)

a. $NH_2(CH_2)_4NH_2$

b. $NH_2(CH_2)_6NH_2$

c. $NH_2(CH_2)_3NH_2$

d. $NH_2(CH_2)_2NH_2$

---

58. Which of the following elements is the most electronegative? (+1, -0.25)

a. Alluminium

b. Boron

c. Gallium

d. Thallium

---

59. Which HTML tag is used to make a text bold? (+1, -0.25)

a. <body>

b. <b>

c.

d. <None of the above>

---

60. To easily access commonly used commands and tools in a word processor use the _____ bar. (+1, -0.25)

a. Home

b. Title

c. Menu

d. Tool

61. Hareli is the harvest festival of which state?   (+1, -0.25)

    a. Assam

    b. Andhra Pradesh

    c. Himachal Pradesh

    d. Chhattisgarh

---

62. In October 2016, who was sacked as the Chairman of the Tata Sons?   (+1, -0.25)

    a. Ratan Tata

    b. Narayan Murthy

    c. Cyrus Mistry

    d. Vishal Sikka

---

63. Which of the following scientists demonstrated that fermentation is caused by the growth of micro-organisms?   (+1, -0.25)

    a. Edmund Becquerel

    b. Dmitri Mendeleev

    c. Louis Pasteur

    d. Joseph Priestley

---

64. The line consisting of all the bundles which cost exactly equal to the consumer's income is called the _ _ _ _ _ _ _ _ line.   (+1, -0.25)

    a. Demand

    b. Utility

    c. Budget

    d. Indifference

---

65. The area under the short run _____ cost curve up to any level of output gives us the total variable cost up to that level. (+1, −0.25)

    a. Average

    b. Marginal

    c. Total

    d. Variable

---

66. If price of an article decreases from Rs. 60 to Rs. 50, when quantity demanded increases from 1000 units to 1200 units. Find point elasticity of demand? (+1, −0.25)

    a. −1

    b. 1.2

    c. 1.5

    d. 1.6

---

67. Which ratio is the proportion of the total deposits commercial banks keep as reserves? (+1, −0.25)

    a. Cash Reserve

    b. Currency Deposit

    c. Reserve ratio

    d. Statutory Liquidity

---

68. Gross Domestic Product + Net factor income from abroad = (+1, −0.25)

    a. Personal income

b. Personal Disposable Income

c. Gross National Product

d. Net National Product at factor cost

---

69. Which of the following metals is not used as a catalyst in catalytic converts fitted in automobiles?   (+1, -0.25)

   a. Platinum

   b. Polonium

   c. Rhodium

   d. Palladium

---

70. Bio-magnification is well established for which of the following pollutants?   (+1, -0.25)

   a. Zinc

   b. Mercury

   c. Copper

   d. Nickel

---

71. All changes in climate and weather take place in which layer of the atmosphere?   (+1, -0.25)

   a. Stratosphere

   b. Mesosphere

   c. Thermosphere

   d. Troposphere

---

72. Which type of electromagnetic radiation converts oxygen into ozone?   (+1, -0.25)

a. Gamma rays

b. Cosmic rays

c. Infra-red rays

d. Ultra-violet rays

---

73. Jan Koum is the cofounder of which startup? (+1, -0.25)

a. Microsoft

b. Google

c. Facebook

d. Whatsapp

---

74. With reference to the interior of the earth consider the following statements. (+1, -0.25)

1] Body waves are generated due to the release of energy at the focus.
2] Denser the material, the lower is the velocity of the Earthquake waves.
3] There are two types of body waves. They are called P and S-waves.

Which of the statements given above is / are correct?

a. 1 and 2 only

b. 2 and 3 only

c. 3 only

d. 1 and 3 only

---

75. Which of the following is a major tectonic plate? (+1, -0.25)

a. Cocos plate

b. Arabian plate

    c. Pacific plate

    d. Nazca plate

---

76. The mean distance between the Sun and the Earth is approximately _____.   **(+1, -0.25)**

    a. 99.6 Million Km

    b. 49.6 Million Km

    c. 149.6 Million Km

    d. 199.6 Million Km

---

77. The process by which soil deposits through compaction turn into rocks is called   **(+1, -0.25)**
_____.

    a. lithification

    b. metamorphication

    c. slatification

    d. petrification

---

78. The Rabi cropping season is from _____.   **(+1, -0.25)**

    a. April – June

    b. June – September

    c. May – August

    d. October – March

---

79. With reference to India's freedom struggle consider the following statements.   **(+1, -0.25)**

    1] Gandhi's first major public appearance was at the opening of the Banaras Hindu
University (BHU) in February 1916.

2] During the Great War of 1914 - 18, the French had instituted censorship of the press and permitted detention without trial.

3] Jallianwala Bagh massacre took place in Amritsar in April 1819.

Which of the above statements are right?

a. 1 and 2 only

b. 2 and 3 only

c. 3 only

d. 1 and 3 only

---

80. By the sixth century BC, _ _ _ _ _ had established control over major parts of the Assyrian empire.   (+1, -0.25)

a. Iranians

b. Greeks

c. Romans

d. Mongols

---

81. Asoka, arguably the most famous ruler of early India, conquered _ _ _ _ _ _ _ _, present - day coastal Orissa.   (+1, -0.25)

a. Pataliputra

b. Prayaga

c. Taxila

d. Kalinga

---

82. Ibn Battuta was a _ _ _ _ _ _ _ _ who wrote about his travels to India in the fourteenth century.   (+1, -0.25)

a. Persian

b. Egyptian

c. Turk

d. Moroccan

---

83. One of the earliest Bhakti movements were led by the Nayanmars, who were devotees of _____. **(+1, -0.25)**

a. Shiva

b. Vishnu

c. Surya

d. Brahma

---

84. Phonograph was invented by which scientist? **(+1, -0.25)**

a. Alexander Graham Bell

b. Thomas Edison

c. Jagadish Chandra Bose

d. George Eastman

---

85. Consider the following pairs. **(+1, -0.25)**

Event: Time interval (in Seconds)

1] Period of atomic vibrations: 10^{-15}

2] Period of radio wave: 10^{-6}

3] Travel time for light from Sun to Earth: 10^6

4] Revolution period of the moon: 10^{10}

Which of the above pairs are correctly matched?

a. 1 and 4 only

b. 1 and 2 only

c. 2 and 3 only

d. 2, 3 and 4 only

---

86. The correct expression for the time period (T) of a particle of mass (m) performing Simple Harmonic Motion, where k is a constant, is _ _ _ _ _ _ _ _.   (+1, −0.25)

a. $T = 2\pi\sqrt{(k/m)}$

b. $T = 2\pi(m/k)^2$

c. $T = 2\pi(k/m-k)^2$

d. $T = 2\pi\sqrt{(m/k)}$

---

87. Who has a wavelength range of 700 nm to 400 nm?   (+1, −0.25)

a. X - Rays

b. Visible light

c. Microwaves

d. Radio waves

---

88. How far should the object be placed from a concave mirror of focal length 4.8 cm, when the image is to be obtained at a distance of 12 cm from the mirror?   (+1, −0.25)

a. 8 cm

b. 10 cm

c. 12 cm

d. 15 cm

---

89. The Institution of the Speaker and his role of the Indian Constitution are borrowed from the _ _ _ _ _ constitution.   (+1, −0.25)

   a. British

   b. French

   c. Irish

   d. Canadian

---

90. Which of the following is a characteristic of a Proportional Representation system?   (+1, −0.25)

   a. The country is divided into small geographical units called constituencies or districts

   b. Candidate who wins the election may not get majority (50%+1) votes

   c. A party may get more seats than votes in the legislature

   d. Every party gets seats in the legislature in proportion to the percentage of votes that it gets

---

91. Which of the following is false with reference to Presidential type of executive?   (+1, −0.25)

   a. President is the head of the Government

   b. President is head of the state

   c. The President is usually indirectly elected by the people

   d. President is accountable to the Legislature

---

92. Which of the following subjects is included in the Concurrent List?   (+1, −0.25)

   a. Banking

---

b. Trade Unions

c. Agriculture

d. Police

---

93. Independence of Judiciary means all of the following, except _____.   (+1, -0.25)

   a. Executive must not restrain the functioning of the judiciary

   b. Legislature should not interfere with the decision of the judiciary.

   c. Absence of accountability

   d. Judges must be able to perform their functions without fear

---

94. Jwala Gutta is associated with which sport?   (+1, -0.25)

   a. Wrestling

   b. Boxing

   c. Badminton

   d. Weightlifting

---

95. Who wrote the novel "Angels & Demons"?   (+1, -0.25)

   a. Dan Brown

   b. Jonathan Swift

   c. Daniel Defoe

   d. William Shakespeare

---

96. Over two - thirds of all named species on earth are _____.   (+1, -0.25)

   a. Porifera

b. Arthopods

c. Aschelminthes

d. Ctenophora

---

97. Which type of epithelium is made of a single thin layer of flattened cells with irregular boundaries? (+1, -0.25)

a. Cuboidal

b. Columnar

c. Ciliated

d. Squamous

---

98. Which is the longest bridge in India? (+1, -0.25)

a. Bandra - Worli Sea Link

b. Mahatma Gandhi Setu

c. Vikramshila Setu

d. Bhupen Hazarika Setu

---

99. Which of the following is a famous Classical Indian dancer? (+1, -0.25)

a. Amrita Sher Gil

b. Satish Gujral

c. Sonal Mansingh

d. Bhimsen Joshi

---

100. Which of the following is a recipient of the "Ashoka Chakra" award? (+1, -0.25)

a. Abhijeet Gupta

b. Hangpan Dada

c. Akhil Kumar

d. Sunil Chhetri

101. A body is thrown up at an angle of 45° with a velocity of 100 m/sec so as to describe a parabola. Its vertical velocity on point of return down will be   (+1, -0.25)

    a. Zero

    b. 130 m/sec

    c. 50 m/sec

    d. 70.7 m/sec

---

102. When the spring of a watch is wound it possess _ _ _ _ _.   (+1, -0.25)

    a. Heat energy

    b. Kinetic energy

    c. Potential energy

    d. Wound energy

---

103. When a body falls freely under gravitational force, it possesses _ _ _ _ _ _.   (+1, -0.25)

    a. Maximum weight

    b. Minimum weight

    c. No weight

    d. No effect on its weight

---

104. The apparent weight of a man in moving lift is less than his real weight when it is going down with _ _ _ _ _.   (+1, -0.25)

    a. Uniform speed

    b. An acceleration

c. Some linear momentum

d. Retardation

---

105. A body is thrown vertically upwards with a velocity of 980 cm/sec, then the time the body will take to reach the ground will be

(+1, −0.25)

a. 1 second

b. 2 second

c. 2.5 second

d. 4 second

---

106. The figure below shows a weight of 20 kg suspended at one end of the cord and a force of 30 kg applied at the other end of the cord passing over a pulley. Neglecting the weight of the rope and pulley, the tension in the cord will be

(+1, −0.25)
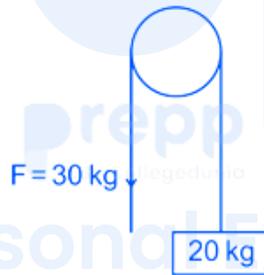
a. 30 kg

b. 20 kg

c. 10 kg

d. 50 kg

---

107. The weights of 2W and W are connected by an inextensible string and rest on two inclined planes, inclined at 30° and 60° respectively as shown in the figure below. Angle 'α' will be equal to

(+1, −0.25)
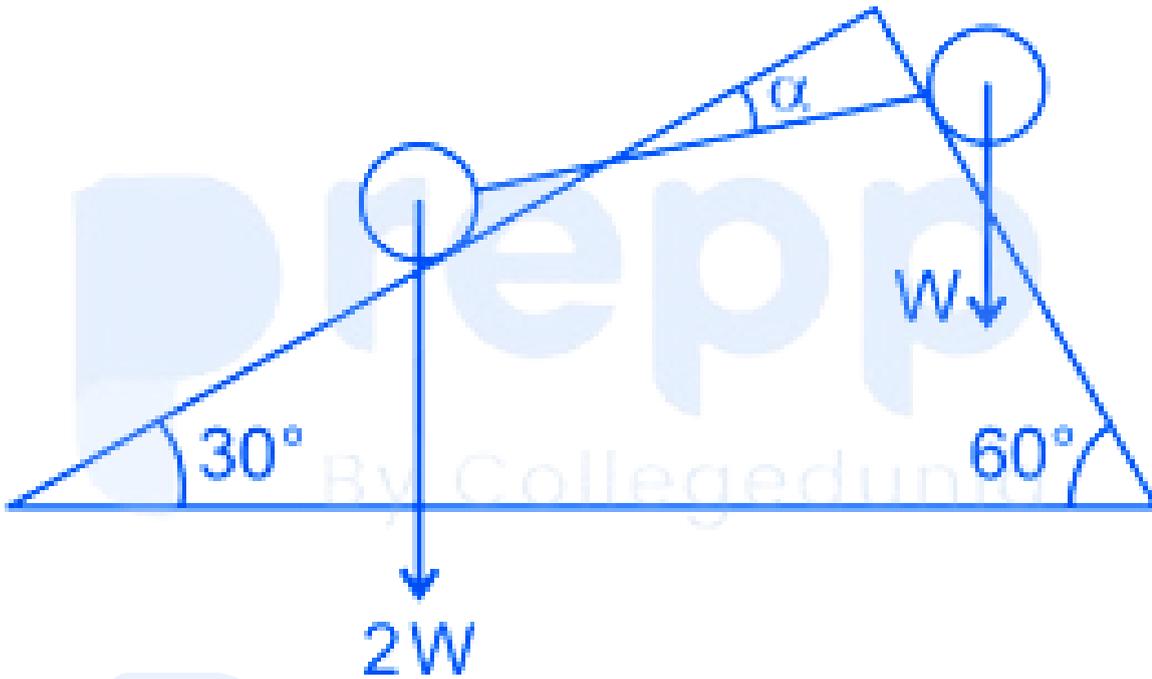
a. 30°

b. $\cos^{-1}(1/2)$

c. 45°

d. $\tan^{-1}[(\sqrt{3})/2)]$

---

108. Two rectangular blocks of weight 'W' each are connected by a flexible cord and rest   (+1, −0.25)
upon a horizontal and an inclined plane with the cord passing over a pulley as shown
in the figure below. If μ is the coefficient of friction for all continuous surfaces, angle 'θ'
for motion of system to impede will be

a. tan θ = μ

b. tan (θ/2) = μ

c. tan (2θ) = μ

d. tan θ = 2μ

---
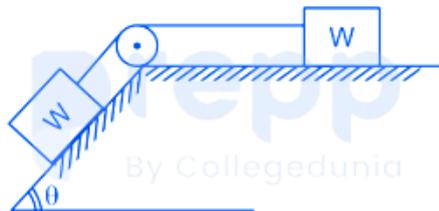
109. The centre of gravity of a (10 × 15 × 5) cm T section (From bottom) will be   (+1, −0.25)

a. 7.5 cm

b. 5.0 cm

c. 8.75 cm

d. 7.85 cm

---

110. In simple harmonic motion, acceleration of a particle is proportional to   (+1, −0.25)

a. Rate of change of velocity

b. Displacement

c. Velocity

d. Direction

---

111. Rate of change of momentum takes place in the direction _____.   (+1, −0.25)

a. Of motion

b. Of applied force

c. Opposite to the direction of applied force

d. Perpendicular to the direction of motion

---

112. The work done by a body in moving down a smooth inclined plane in comparison to being dropped vertically downwards from same height will be   (+1, −0.25)

a. More

b. Less

c. Equal

d. Zero in both cases

---

113. Rate of change of momentum is proportional to the   (+1, -0.25)

   a. Displacement

   b. Velocity

   c. Acceleration

   d. Impressed force

---

114. Which of the following have same units?   (+1, -0.25)

   A. Momentum and impulse

   B. Stress and pressure

   C. Work and kinetic energy

   a. A lone

   b. B alone

   c. C alone

   d. A, B and C

---

115. A ball is thrown up. The sum of kinetic and potential energies will be maximum at   (+1, -0.25)

   a. Ground

   b. Highest point

   c. In the centre while going up

   d. At all points

---

116. Which of the following is not a dimensionless parameter?   (+1, -0.25)

   a. Reynolds number

   b. Friction factor

   c. Pressure coefficient

   d. Kinematic viscosity

117. The specific speed of a pump is defined as the speed of a unit of such a size that   (+1, -0.25)

   a. It delivers unit discharge at unit head

   b. It delivers unit discharge at unit power

   c. It requires unit power per unit head

   d. It produces unit horsepower with unit head

118. The total energy of each particle at various places in the case of perfect   (+1, -0.25)
   incompressible fluid flowing in continuous stream

   a. Keeps on increasing

   b. Keeps on decreasing

   c. Remains constant

   d. May increase or decrease

119. Pressure intensifier increases the pressure in proportion to _____.   (+1, -0.25)

   a. Ratio of diameters

   b. Square of ratio of diameters

   c. Inverse ratio of diameters

d. Square of inverse ratio of diameters

---

120. Normal depth in open channel flow is the depth of flow corresponding to   (+1, −0.25)

a. Steady flow

b. Unsteady flow

c. Laminar flow

d. Uniform flow

---

121. Which of the following is not a rotary pump?   (+1, −0.25)

a. Gear

b. Vane

c. Screw

d. Axial

---

122. Venturimeter is used to measure flow of fluids in pipe when pipe is   (+1, −0.25)

a. Horizontal

b. Vertical, flow downwards

c. Vertical, flow upwards

d. In any position

---

123. Hydraulic accumulator is used for   (+1, −0.25)

a. Accumulating oil

b. Supplying large quantities of oil for very short duration

c. Generally high pressures to operate hydraulic machines

d. Supplying energy when main supply fails

---

124. Differential manometer is used to measure   **(+1, -0.25)**

a. Very low pressure

b. Pressure in pipes, channels etc

c. Atmospheric pressure

d. Difference of pressure between two points

---

125. The total pressure force on a plane area is equal to the area multiplied by the intensity   **(+1, -0.25)**
of pressure at the centroid, if

A. The area is horizontal

B. The area is vertical

C. The area in inclined

a. Only A

b. Only B

c. Only C

d. A, B and C

---

126. A piece weighing 3 kg in air was found to weigh 2.5 kg when submerged in water. Its   **(+1, -0.25)**
specific gravity is

a. 1

b. 5

c. 6

d. 7

---

127. The dimensions of coefficient of viscosity are $\qquad$ (+1, −0.25)

  a. $M^1L^{-1}T^{-1}$

  b. $M^1L^1T^{-1}$

  c. $M^{-1}L^1T^1$

  d. $M^1L^{-1}T^1$

---

128. A liquid compressed in cylinder has a volume of 0.04 m^3 at 50 kg/cm^2 and a volume of 0.039 m^3 at 150 kg/cm^2. The bulk modulus of liquid is (+1, −0.25)

  a. 400 kg/cm^2

  b. 4000 kg/cm^2

  c. 40×10^5 kg/cm^2

  d. 40×10^6 kg/cm^2

---

129. Maximum work is done in compressing air when the compression is _ _ _ _. (+1, −0.25)

  a. Isothermal

  b. Adiabatic

  c. Polytropic

  d. None of these

---

130. Surface tension _ _ _ _. (+1, −0.25)

  a. Acts in the plane of the interface normally to any line in the surface

  b. Is also known as capillarity

  c. Is a function of the curvature of the interface

d. Decrease with fall in temperature

---

131. In a static fluid, _ _ _ _ _ _ _.   (+1, -0.25)

   a. linear deformation is small

   b. Resistance to shear stress is small

   c. Only normal stress can exist

   d. Fluid pressure is small

---

132. When a piping system is made up primarily of vertically lift and very little pipe friction,   (+1, -0.25)
   the pump characteristic should be _ _ _ _ _.

   a. Horizontal

   b. Nearly horizontal

   c. Steep

   d. First rise and then fall

---

133. A block of ice floating over water in a vessel slowly melts in it. The water level in the   (+1, -0.25)
   vessel will

   a. Start rising

   b. Start falling

   c. Will remain constant

   d. Will depend on temperature of water

---

134. Low specific speed of a pump implies that it is   (+1, -0.25)

   a. Centrifugal pump

---

   b. Mixed flow pump

   c. Axial flow pump

   d. Axial flow pump or mixed flow pump

---

135. Which of the following pumps is used for pumping viscous fluids?   **(+1, -0.25)**

   a. Centrifugal pump

   b. Screw pump

   c. Reciprocating pump

   d. Jet pump

---

136. An impulse turbine is used for _ _ _ _ _ _ _ _.   **(+1, -0.25)**

   a. Low head of water

   b. High head of water

   c. Medium head of water

   d. High discharge

---

137. An ideal fluid is   **(+1, -0.25)**

   a. Similar to perfect gas

   b. One which obeys Newtons' law of viscosity

   c. Frictionless and incompressible

   d. Very viscous

---

138. The ratio of power produced by the turbine to the energy actually supplied to the turbine is called _ _ _ _.   **(+1, -0.25)**

a. Mechanical efficiency

b. Hydraulic efficiency

c. Overall efficiency

d. Turbine efficiency

---

139. Laminar flow occurs in pipes, when Reynolds number _ _ _ _ _ _. (+1, -0.25)

a. Lies between 2000 – 3000

b. Lies between 3000 – 4000

c. Is more than 2000

d. Is less than 2000

---

140. Reaction turbines are used for _ _ _ _ _ (+1, -0.25)

a. Low head

b. High head

c. High head and low discharge

d. Low head and high discharge

---

141. Specific speed of hydraulic turbine is dependent upon _ _ _ _. (+1, -0.25)

a. Speed, power developed and flow

b. Speed, power developed and effect head

c. Speed, head and flow

d. Speed, mean diameter and head

---

142. The cavitation in reaction type hydraulic turbines is avoided by (+1, -0.25)

A. Using highly polished blade

B. Using stainless steel runner

C. Running the turbine at designed speed

D. Installing the turbine below the tail race level

   a. Only A

   b. A and B only

   c. B and C only

   d. A, B, C and D

---

143. A hydraulic accumulator normally consists of   **(+1, -0.25)**

   a. Two cylinders, two rams and a storage device

   b. A cylinder and a ram

   c. Two co-axial rams and two cylinders

   d. A cylinder, a piston, storage tank and control valve

---

144. Surface tension of water _ _ _ _ _.   **(+1, -0.25)**

   a. Increase with decrease in temperature

   b. Decreases with decrease in temperature

   c. Independent of temperature

   d. None of these

---

145. The point in the immersed body through which the resultant pressure of the liquid may be taken to act is known as   **(+1, -0.25)**

   a. Centre of gravity

b. Centre of buoyancy

c. Centre of pressure

d. Metacentre

---

146. High speed steel should have   (+1, -0.25)

A. Wear resistance

B. Hardness

C. Toughness

a. Only A

b. Only B

c. Only C

d. Both A and B

---

147. 18-4-1 high speed steel contains   (+1, -0.25)

a. 18% carbon

b. 4% carbon

c. 15% carbon

d. 0.7% carbon

---

148. The essential ingredient of any hardened steel is   (+1, -0.25)

a. Austenite

b. Pearlite

c. Martensite

d. Cementite

149. Steel containing 11% to 14% Chromium and 0.35% carbon is called _ _ _ _ _.   (+1, -0.25)

    a. Martensitic stainless steel

    b. Ferritic stainless steel

    c. Austenitic stain less steel

    d. None of these

150. Steel containing 18% chromium and 8% nickel is called _ _ _ _ _.   (+1, -0.25)

    a. Martensitic stainless steel

    b. Ferritic stainless steel

    c. Austenitic stainless steel

    d. None of these

151. The ultimate strength of steel in tension in comparison to shear is in the ratio of   (+1, -0.25)

    a. 1: 1

    b. 2: 1

    c. 3: 2

    d. 2: 3

152. Steel containing pearlite and ferrite is   (+1, -0.25)

    a. Tough

    b. Hard

    c. Soft

    d. Ductile

153. Steel with carbon below 0.8% is called _ _ _ _ _ _ _ _ _ _.   (+1, -0.25)

    a. Eutectoid steel

    b. Hypo-eutectoid steel

    c. Austenite

    d. Hyper-eutectoid steel

---

154. Fluidity is greatly influenced by   (+1, -0.25)

    a. Carbon content in molten metal

    b. Pouring temperature of molten metal

    c. Inoculation added

    d. None of these

---

155. Hardness of steel depends upon amount of   (+1, -0.25)

    a. Pearlite

    b. Ferrite

    c. Cementite

    d. Martensite

---

156. Which of the following steel key is equally strong in failure by shear and crushing?   (+1, -0.25)

    a. Rectangular

    b. Flat

    c. Square

    d. Circular

157. In the flange coupling the two flanges are coupled together by means of bolts fitted in   (+1, -0.25)

  a. reamed holes

  b. machined holes

  c. threaded holes

  d. gasketed holes

158. The sleeve or muff coupling is designed as a _ _ _ _.   (+1, -0.25)

  a. Thin vessel

  b. Thick vessel

  c. Solid shaft

  d. Hollow shaft

159. Metal to metal joint is used for applications subjected to _ _ _ _.   (+1, -0.25)

  a. Very high pressure

  b. Very high temperature

  c. Very high pressure and temperature

  d. Severe vibrations

160. What is the addendum of a cycloidal gear tooth?   (+1, -0.25)

  a. Cycloid

  b. Involute

  c. Epicycloid

  d. Hypocycloid

161. Which type of gear will be used for non-parallel and non-intersecting shafts? (+1, -0.25)

   a. Helical gears

   b. Hypoid gears

   c. Spur gears

   d. Herringbone gears

162. Welding units operate at what power factor? (+1, -0.25)

   a. 0.3

   b. 0.6

   c. 0.8

   d. 0.9

163. Concentric helical springs should be (+1, -0.25)

   a. Wound in same direction

   b. Wound with opposite hand helices

   c. Could be wound in any direction

   d. Direction of winding depends on the load to be carried

164. In a horizontal flat belt drive, it is customary to use (+1, -0.25)

   a. Bottom side of the belt as slack side during power transmission

   b. Top side of the belt as the slack side

   c. Crossed-belting

   d. Idler in between

165. In a V-belt drive, the belt makes contact at _ _ _ _.   (+1, -0.25)

    a. Bottom of pulley

    b. Sides of the groove of pulley

    c. Sides of groove and bottom of pulley

    d. Could make contact anywhere

166. Which type of chain is used in motorcycle?   (+1, -0.25)

    a. Bush roller

    b. Silent

    c. Pintle

    d. Ewast

167. In an involute gear, the base circle must be _ _ _ _.   (+1, -0.25)

    a. At root circle

    b. Under root circle

    c. Above root circle

    d. Under pitch circle

168. Gear teeth are made harder to avoid   (+1, -0.25)

    a. Greater compressive stress in bending

    b. Tensile strength

    c. Abrasion

    d. Wear

169. The distance between the centres of the rivets in adjacent rows of a zigzag riveted joint is known as _ _ _ _ _ .   (+1, -0.25)

    a. Pitch

    b. Back pitch

    c. Diagonal pitch

    d. Diametric pitch

170. The safe twisting moment for a compound shaft is equal to the _ _ _ _ _ _ _ _ .   (+1, -0.25)

    a. Maximum calculated value

    b. Minimum calculated value

    c. Mean value

    d. Extreme value

171. What is the usual quantity of free air taken per person in air conditioning system?   (+1, -0.25)

    a. 1.2 m 3/sec

    b. 1.2 m 3/min

    c. 1.2 m 3/hour

    d. 6 m 3/min

172. The total emissivity power is defined as the total amount of radiation emitted by a black body per unit   (+1, -0.25)

    a. Temperature

    b. Thickness

    c. Area

d. Time

---

173. Sensible heat is the heat needed to   (+1, −0.25)

   a. Vaporise water into steam and vice versa

   b. Change the temperature of a liquid or vapour

   c. Convert water into steam and superheat it

   d. Measure dew point temperature

---

174. The difference between dry bulb and wet bulb temperature increases as _ _ _ _ _.   (+1, −0.25)

   a. Air becomes wetter

   b. Air becomes drier

   c. Atmospheric temperature rises

   d. Atmospheric temperature decreases

---

175. The weight of the water vapour in kg contained in 1 m^3 of air-vapour mixture at its   (+1, −0.25)
total pressure is known as _ _ _ _ _ _.

   a. Degree of saturation

   b. Percent humidity

   c. Humidity ratio

   d. Vapour density

---

176. Dehumidification is the process of removing moisture from air with dry bulb   (+1, −0.25)
temperature _ _ _ _ _ _.

   a. Increasing

---

b. Decreasing

c. Remaining constant

d. Changing in any direction

---

177. Spray humidifying is the process of adding moisture to the air by passing it through   (+1, -0.25)

A. Chiller

B. Air conditioning plant

C. Washers

a. Only A

b. Only B

c. Only C

d. A or B

---

178. Dew point is _____.   (+1, -0.25)

a. The temperature at which condensation of steam in saturated air will start

b. The lowest attainable temperature for a mixture of air and steam

c. Dependent on pressure of air

d. Used in connection with air conditioning

---

179. Relative humidity is   (+1, -0.25)

a. Something concerned with air conditioning

b. The ratio of moisture present in air to the capability of air to hold maximum moisture

c. The ratio of actual humidity to absolute humidity

d. Representative of amount of moisture held in air

---

180. Cryogenics refers to   (+1, -0.25)

   a. refrigeration at low temperate

   b. thermodynamic analysis at low temperature

   c. engineering field concerned with equipment in the range of – 150ºC to absolute zero

   d. Refrigeration under vaccum conditions

---

181. Which of the following refrigerating plants required no electricity?   (+1, -0.25)

   a. vapour absorption

   b. vapour compression

   c. air-refrigeration

   d. vortex tube

---

182. A hermetically sealed unit implies ____.   (+1, -0.25)

   a. Compressor is sealed

   b. Compressor motor is sealed

   c. Refrigerant cycle sealed

   d. Compressor and motor are sealed

---

183. The work required for compression in a closed system increases when the value of 'n' (the index of compression) ____.   (+1, -0.25)

   a. Increases

b. Decreases

c. Remains the same

d. First increases and then decreases

---

184. The value of entropy at 0 K is taken as   (+1, -0.25)

a. 1

b. 0

c. -1

d. 0.5

---

185. On a pressure volume diagram, the process line $PV^n = C$ (as the value of 'n' increases)   (+1, -0.25)
will _ _ _ _ _.

a. Come closer to y-axis

b. Come closer to x-axis

c. Come closer to 45° inclined line

d. Remain in the same positions

---

186. Calorie is measure of _ _ _ _.   (+1, -0.25)

a. Specific heat

b. Quantity of heat

c. Thermal capacity

d. Entropy

---

187. Kelvin Plank's law deals with the _ _ _ _.   (+1, -0.25)

a. Conservation of heat

b. Conservation of work

c. Conversion of heat into work

d. Conservation of work into heat

---

188. Diesel cycle consists of which four processes? (+1, -0.25)

a. two isothermal and two isentropic

b. two isentropic and two constant volumes

c. two isentropic, one constant volume and one constant pressure

d. two isentropic and two constant pressures

---

189. Gas turbine cycle consists of: (+1, -0.25)

a. two isothermal and two isentropic

b. two isentropic and two constant volumes

c. two isentropic, one constant volume and one constant pressure

d. two isentropic and two constant pressures

---

190. The heat addition in dual combustion cycle is done at _____? (+1, -0.25)

a. constant pressure

b. constant volume

c. partially at constant volume and partially at constant pressure

d. constant temperature

---

191. The concept of regeneration is used in which cycles? (+1, -0.25)

a. Rankine and Stirling

b. Stirling and Ericsson

c. Rankine and Ericsson

d. Stirling and Brayton

---

192. A high-speed diesel engine theoretically operates on _____?   (+1, -0.25)

a. constant pressure cycle

b. constant volume cycle

c. constant temperature cycle

d. mixed cycle of constant pressure and constant volume

---

193. The constant pressure gas turbine works on the _____?   (+1, -0.25)

a. Rankine Cycle

b. Bell – Coleman cycle

c. Carnot cycle

d. Brayton cycle

---

194. All diesel engines except slow speed engines use which cycles?   (+1, -0.25)

a. Diesel

b. Otto

c. Joule

d. Mixed dual

---

195. What does the second law of thermodynamics define?   (+1, -0.25)

a. entropy

b. enthalpy

c. heat

d. work

---

196. Air standard of diesel cycle is dependent upon   (+1, -0.25)

A. ratio of specific heats

B. Cut off ratio

C. adiabatic compression ratio

a. Only A

b. Only B

c. Only C

d. A, B and C

---

197. The saturation temperature of steam with increase in pressure increases   (+1, -0.25)
_____.

a. in a linear form (linearly)

b. rapidly first and then slowly

c. slowly first and then rapidly

d. in an inverse form (inversely)

---

198. A process occurs spontaneously if its entropy _____.   (+1, -0.25)

a. increases

b. decreases

c. remains the same

d. becomes zero

---

199. All gases behave ideally under _ _ _ _ _ _ _ _.   (+1, -0.25)

a. Vacuum conditions

b. low pressure conditions

c. high pressure conditions

d. high pressure and high temperature conditions

---

200. A hot short metal is _ _ _ _ _ _ _ _.   (+1, -0.25)

a. brittle when cold

b. brittle when hot

c. brittle under all conditions

d. ductile at high temperature