



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



UP TET



IBPS RRB



IBPS CLERK



IES



UPSC CAPF



SSC Stenogr..



RRB NTPC



SSC GD



RBI GRADE B



RBI Assistant



DSSSB

RRB ALP/Technician 2018 CBT 2 Heat Engine Question Paper (23-Jan-2019) (Shift 3)

Total Time: 2 Hour : 30 Minute

Total Marks: 175

Instructions

Sl No.	Section Name	No. of Question	Maximum Marks	Sectional Timing
1	Part A	100	100	90 Min
2	Part B	75	75	60 Min

- 1.) A total of 150 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.

Your Personal Exams Guide

Part A

1. In angular measurement, one radian is equivalent to _____ degree (approximately). (+1, -0.33)
- a. 65.27
 - b. 57.27
 - c. 90
 - d. 180
-
2. A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series. (+1, -0.33)
- 1.14, 1.28, 1.42, ?, 1.70, 1.84
- a. 1.56
 - b. 1.54
 - c. 1.68
 - d. 1.62
-
3. In an examination, the highest score and the lowest score are different by 55 and the higher one was $\frac{9}{4}$ times the lower one. Find the lowest score. (+1, -0.33)
- a. 40
 - b. 36
 - c. 44
 - d. 48
-

4. What is the work that needs to be done to increase the speed of a 1 kg ball from 2 m/s to 4 m/s? (+1, -0.33)

- a. 8 J
- b. 10 J
- c. 6 J
- d. 12 J

5. The ages of X and Y are in the ratio 4 : 7. Three years earlier, the ratio of their ages was 1 : 2. What is the difference between their current ages ($Y - X$)? (+1, -0.33)

- a. 3
- b. 6
- c. 9
- d. 7.5

6. What is the median of 8, 5, 7, 9, 11, 6, 10? (+1, -0.33)

- a. 9
- b. 8
- c. 10
- d. 7

7. Select the option that is related to the third number in the same way as the second number is related to the first number. (+1, -0.33)

$-9/11 : 11/9 :: 13/2 : ?$

- a. $\frac{3}{7}$
 - b. $\frac{2}{13}$
 - c. $-\frac{2}{13}$
 - d. $-\frac{7}{3}$
-

8. A _____ is a theoretical exact plane, axis or point location that GD & T or dimensional tolerances are referenced to. (+1, -0.33)

- a. flange
 - b. frame
 - c. section
 - d. datum
-

9. Given below is a question, followed by two arguments, I and II. You have to decide which of the given arguments, if any, is a strong argument, with respect to the question. (+1, -0.33)

Question: Should advertisements be banned on television?

Argument I: Yes, advertisements are immoral.

Argument II: No, advertisements bring in revenue which helps reduce cost for viewers.

- a. Only argument II is strong.
 - b. Only argument I is strong.
 - c. Neither I nor II is strong.
 - d. Both I and II are strong.
-

10. A can do $\frac{2}{5}$ of a work in 10 days. B can do $\frac{1}{2}$ of the same work in 10 days. They worked together for 5 days and then A left. In how many days will B finish the remaining work? (+1, -0.33)

- a. 8
- b. 10
- c. 11
- d. 9

11. What is the distance between the points (4, 3) and (3, -2)? (+1, -0.33)

- a. $\sqrt{26}$
- b. $\sqrt{24}$
- c. 6
- d. 5

12. Substances that are broken down by biological processes are said to be ----- (+1, -0.33)

- a. reusable
- b. non-biodegradable
- c. non-reusable
- d. biodegradable

13. If a body has a specific gravity of less than 1, then it will float in/on ----- (+1, -0.33)

- a. air
- b. water
- c. liquids
- d. mercury

14. A motorcycle travelled 1000 m at 36 km/hr. Find the time (in seconds) taken by the motorcycle to cover this distance. (+1, -0.33)

- a. 300
- b. 100
- c. 400
- d. 200

15. Given below are two statement, followed by two conclusion, I and II. You have to consider the statement 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, follow(s) from the given statements. (+1, -0.33)

Statement 1: No quadrilaterals are polygons.

Statement 2: All polygons are rhombuses.

Conclusion I: Some rhombuses are quadrilaterals.

Conclusion II: Some rhombuses are polygons.

- a. Neither I nor II follows
- b. Only conclusion II follows
- c. Only conclusion I follows
- d. Both I and II follow

16. The abbreviation AC in an engineering drawing stands for _____. (+1, -0.33)

- a. Across Corners
- b. Aerial Cut
- c. Attached Circle
- d. Air Conditioning

17. Greater the value of _____ of a material, the more rapidly it will conduct heat. (+1, -0.33)

- a. melting point
- b. latent heat
- c. regelation
- d. thermal conductivity

18. I, J, K and L are sitting in a row. L and I are sitting next to each other and I and K are the ends. Who is sitting next to J? (+1, -0.33)

- a. Only K
- b. L and I
- c. K and L
- d. Only L

19. Two planes E and F start flying from the same point. E flies 7 km west, then turns to its left and flies 15 km. Meanwhile F flies 11 km east and turns right and flies 15 km. Where is F with respect to E? (+1, -0.33)

- a. F is 18 km west of E
- b. F is 4 km east of E
- c. F is 18 km east of E
- d. F is 4 km west of E

20. Which of the following options does not have an SI base unit? (+1, -0.33)

- a. Amount of substance
- b. Frequency
- c. Luminous intensity
- d. Electric current

21. The effort applied to move a load is 15 units and the mechanical advantage is observed to be 3. Find the load. (+1, -0.33)

- a. 5 units
- b. 3 units
- c. 15 units
- d. 45 units

22. What is the unit's digit in $3^{66} \times 6^{41} \times 7^{53}$ (+1, -0.33)

- a. 8
- b. 3
- c. 6

d. 7

23. A sum of Rs. 10,000 amounts to Rs. 11, 449 in 2 years, when the interest is compounded annually. The interest rate percent per annum is: (+1, -0.33)

a. 6%

b. 1%

c. 7%

d. 8%

24. A salesperson starts from his office and drives 2 km east, then turns north and drives 7 km, then turns to his right and drives 6 km, then turns south and drives 7 km. Where is he now with respect to his starting position? (+1, -0.33)

a. 8 km east

b. 4 km west

c. 4 km east

d. 8 km west

25. Select the option that is related to the third term in the same way as the second term is related to the first term. (+1, -0.33)

Tall : Short :: Glad : ?

a. Sad

b. Happy

c. Emotion

d. Smile

26. Which Indian cricketer received the Padma Bhushan in 2018?

(+1, -0.33)

- a. MS Dhoni
- b. Virat Kohli
- c. Sachin Tendulkar
- d. Saurav Ganguly

27. Choose the figure that is different from the rest.

(+1, -0.33)



28. If '+' represents '×', '-' represents '+', '×' represents '÷' and '÷' represents '-' then find the value of the following expression.

(+1, -0.33)

$$9 \times 3 + 6 \div 2 = ?$$

- a. 20

- b. 10
- c. 12
- d. 16

29. A 200 g block of iron was heated from 30°C to 60°C. How much heat was transferred to the block (specific heat of iron is $450 \text{ J kg}^{-1} \text{ K}^{-1}$)? (+1, -0.33)

- a. 6000 J
- b. 27 J
- c. 2700 J
- d. 270 J

30. If the width of a standard engineering drawing sheet is 841 mm, then its length would be _____ mm. (+1, -0.33)

- a. 1189
- b. 1250
- c. 1000
- d. 1216

31. A and B can do a work in 15 days. B and C can do the work in 20 days and A and C can do the work in 10 days. In how many days will they together completed the work? (+1, -0.33)

- a. 10.67 days
- b. 10.91 days
- c. 10.71 days

d. 9.23 days

32. Two resistors, one of $12\ \Omega$ and the other of $24\ \Omega$ are connected in parallel. This combination is connected in series with a $22\ \Omega$ resistor and a $12\ \text{V}$ battery. The current in the $12\ \Omega$ resistor is _____.

(+1, -0.33)

a. $(8/15)\ \text{A}$

b. $(2/15)\ \text{A}$

c. $(6/15)\ \text{A}$

d. $(4/15)\ \text{A}$

33. Two resistors of $10\ \Omega$ and $20\ \Omega$ are connected in series and this combination is connected across a $30\ \text{V}$ supply voltage. Find the voltage across the $10\ \Omega$ resistor.

(+1, -0.33)

a. $20\ \text{V}$

b. $10\ \text{V}$

c. $5\ \text{V}$

d. $15\ \text{V}$

34. An article was sold for Rs. 12,000. Had a discount of 15% been offered, a profit of 2% would have been made. What was the cost price?

(+1, -0.33)

a. Rs. 10,200

b. Rs. 10,000

c. Rs. 11,000

d. Rs. 10,800

35. Find the odd group of letters from the given alternatives. (+1, -0.33)

- a. EFG
- b. PQR
- c. VWX
- d. HJL

36. A car covers 400 m in 20 seconds. Find the average speed (in km/hr) of the car. (+1, -0.33)

- a. 72
- b. 124
- c. 108
- d. 36

37. Two resistance of 2Ω and 6Ω are connected in series and this combination is connected across a 12 V battery. Find the current in the 6Ω resistor. (+1, -0.33)

- a. 3.5 A
- b. 1.5 A
- c. 0.5 A
- d. 2.5 A

38. Reflection of point $(-2, -6)$ on the Y-axis is: (+1, -0.33)

- a. $(2, 6)$
- b. $(-6, -2)$

c. $(-2, 6)$

d. $(2, -6)$

-
39. Given below are some letters, that each of these letters has a corresponding number. Select the combination of numbers from the option so that the jumbled letters arranged accordingly will form a meaningful English word. (+1, -0.33)

H T R U O A

1 2 3 4 5 6

a. 6, 4, 2, 1, 5, 3

b. 3, 4, 5, 2, 1, 6

c. 1, 6, 2, 4, 5, 3

d. 2, 1, 5, 3, 4, 6

-
40. Tap M and N can together fill a cistern in $48\frac{1}{13}$ minutes. N alone can fill it in 6 minutes. How much time will M alone take to fill the cistern? (+1, -0.33)

a. 9.6 minutes

b. 9 minutes

c. 9.4 minutes

d. 8.6 minutes

-
41. It is mainly due to the gravitational effect of the _____ on the rotating earth that the level of water in the sea rises and falls. (+1, -0.33)

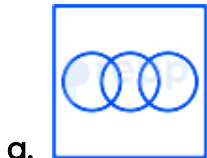
a. Venus

b. Mercury

c. Moon

d. Sun

42. Which of the following Venn diagrams best represents the relationship between Indians, doctors and women? (+1, -0.33)



43. An object weighs X units on the earth. If we take the same object to the moon, its weight there will be _____. (+1, -0.33)

a. zero

b. less than X

c. equal to X

d. more than X

44. RK Narayan is famous for his book _____. (+1, -0.33)

- a. The Room on the Roof
- b. Two Livers
- c. Malgudi Days
- d. A suitable Boy

45. Molar specific heat capacity of a substance is _____. (+1, -0.33)

- a. $\left(\frac{1}{\mu}\right) \left(\frac{\Delta Q}{\Delta T}\right)$
- b. $\mu \left(\frac{\Delta Q}{\Delta T}\right)$
- c. $\left(\frac{1}{\mu}\right) \left(\frac{\Delta T}{\Delta Q}\right)$
- d. $\mu \left(\frac{\Delta T}{\Delta Q}\right)$

46. If C \ (D means C is daughter of D, C & D means C is mother of D and C % D means C is son of D, then what does W \) X & Y % Z mean? (+1, -0.33)

- a. Z is wife of W
- b. Z is mother of W
- c. Z is father of W
- d. Z is daughter of W

47. If a body is NOT homogeneous, then its density is a function of its _____. (+1, -0.33)

- a. pressure

- b. acceleration
- c. position
- d. velocity

48. An object starts from rest at $x = 0$ m and moves with a constant acceleration of 1.6 m/s^2 along the x-axis. During its journey from $x = 12.8$ m to $x = 20.0$ m, its average velocity will be _____.

- a. 2.4 m/s
- b. 3.6 m/s
- c. 8.8 m/s
- d. 7.2 m/s

49. How many medals did India win in Rio Olympics, 2016? (+1, -0.33)

- a. 3
- b. 4
- c. 2
- d. 5

50. If $x = \sqrt{125} \times \sqrt{30} \times \sqrt{6}$, then x is equal to: (+1, -0.33)

- a. 175
- b. 125
- c. 136
- d. 150

51. Unscramble the letters in the words given below and find the odd word out. (+1, -0.33)

- a. FLOW
- b. ILNO
- c. ERTIG
- d. WCO

52. What is the curved surface area of a hemisphere whose radius is 7 cm? (take $\pi = 22/7$) (+1, -0.33)

- a. 616 cm^2
- b. 154 cm^2
- c. 308 cm^2
- d. 924 cm^2

53. If a machine overcomes a load 'L' and the distance travelled by the load is 'Ld', the work done by the load will be _____. (+1, -0.33)

- a. $L \times Ld$
- b. $\frac{L}{Ld}$
- c. $\frac{Ld}{L}$
- d. $\frac{1}{L \times Ld}$

54. What is the least number which when doubled is perfectly divisible by 7, 12 and 15? (+1, -0.33)

- a. 420
 - b. 210
 - c. 214
 - d. 220
-

55. A brass rod (thermal conductivity 109 J/s m K) has an area of cross section 0.04 m^2 and length 20 cm . If the two end of the rod are maintained at a temperature difference of 200°C , the rate of heat flow through the rod is _____.

- a. 3.42 kJ/s
 - b. 2.32 kJ/s
 - c. 4.36 kJ/s
 - d. 5.80 kJ/s
-

56. A machine was bought for Rs. 1,500 and a repairing charge of Rs. 100 was paid afterwards. At what price should it be sold to gain a profit of 25%?

- a. Rs. 2,040
 - b. Rs. 1,960
 - c. Rs. 2,000
 - d. Rs. 1, 920
-

57. The effort in a class 1 lever is in _____ direction(s).

- a. three
- b. multiple

c. two

d. one

58. What is the minimum number of lines required to make the given image?

(+1, -0.33)



a. 13

b. 12

c. 10

d. 9

59. _____ protection must be worn whenever noise levels exceed the noise exposure standard.

(+1, -0.33)

a. Hearing

b. Head

c. Eye

d. Foot

60. The velocity ratio of a simple machine is the ratio of distance traveled by the _____ to the distance traveled by the _____ in the machine.

(+1, -0.33)

a. load; load

- b. effort; load
- c. load; effort
- d. effort; effort

61. A series is give, with one term missing. Choose the correct alternative from the given ones that will complete the series. (+1, -0.33)

OOOOOX, OOOOXX, OOOXXX, OOXXXX, ?

- a. XXXXXX
- b. OOXXXXX
- c. OOXXXX
- d. OXXXXX

62. Which two signs should be interchanged to make the given equation correct? (+1, -0.33)

$$9 \div 3 + 8 \times 2 - 15 = 2$$

- a. $\times$ and $-$
- b. $\div$ and $-$
- c. $+$ and $\times$
- d. $+$ and $-$

63. A source of voltage V maintains a current i in a circuit. The energy supplied to the circuit by the source in time t is _____ . (+1, -0.33)

- a. Vit
- b. $1/Vit$

c. Vi/t

d. V/it

64. If straight lines are drawn from various points on the contour of an object to meet a plane, the figure obtained on the plane is called the _____ of the object. (+1, -0.33)

a. development

b. dimensioning

c. projection

d. animation

65. JPEG stands for _____ (+1, -0.33)

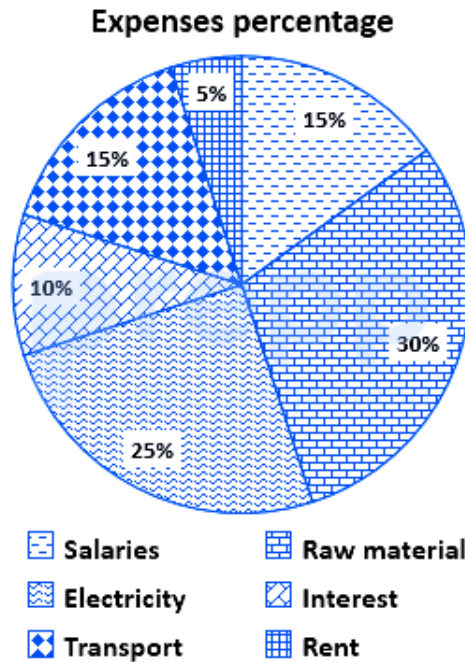
a. Joint Program Experts Group

b. Joint Program Executing Group

c. Joint Photographic Experts Group

d. Joint Program Experimental Group.

66. The pie chart shows the breakup in percentage of the various expenses of a Company. Study the diagram and answer the following question. (+1, -0.33)



What is the interest expense if total expenses is Rs. 25000.

- a. Rs. 2, 500
- b. Rs. 1, 800
- c. Rs. 9, 000
- d. Rs. 5, 000

Your Personal Exams Guide

67. A 4-digit number $1xy7$ is divisible by 11. What is the value of $x - y$? (+1, -0.33)

- a. -8
- b. -2
- c. -4
- d. -6

68. Two resistance of 2Ω and 6Ω are connected in series and this combination is connected across a 12 V battery. Find the power supplied by the battery. (+1, -0.33)

- a. 10 W
- b. 18 W
- c. 16 W
- d. 14 W

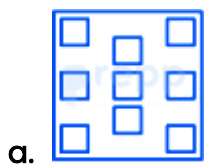
69. Name the scientist who discovered bacteria ? (+1, -0.33)

- a. Robert Koch
- b. James Chadwick
- c. Eugen Goldstein
- d. A V Leeuwenhoek

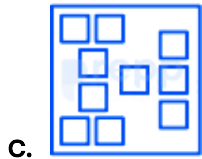
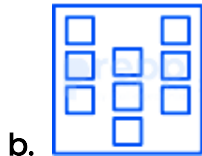
70. Who was the first governor of the Reserve Bank of India? (+1, -0.33)

- a. Sir James Braid Taylor
- b. KR Puri
- c. HVR Iyengar
- d. Sir Osborne A Smith

71. Choose the figure that is different from the rest. (+1, -0.33)



a.



72. A cylindrical wire of length L and radius r has a resistance of R . The resistance of another wire of the same material but thrice its length and one-third its radius will be _____.

(+1, -0.33)

- a. $27R$
- b. $9R$
- c. R
- d. $3R$

73. You are given a question and two statements. Identify which of the statements is/are necessary/sufficient to answer the question.

(+1, -0.33)

Question: What was the discount percent offered on the soap by the store?

Statements:

- I) The store is giving 1 soap free on purchase of three.
- II) Rs. 10 discount is offered on purchase of soap worth 36.

- a. II alone is sufficient while I alone is not sufficient

- b. I alone is sufficient while II alone is not sufficient
- c. Neither I nor II is sufficient
- d. Either I or II is sufficient

74. An airplane flies at the speed of 50 m/s. How much distance (in km) will it cover in a flight of 5 hours? (+1, -0.33)

- a. 895
- b. 850
- c. 880
- d. 900

75. Given below is a statement followed by two assumption numbered I and II. You have to decide which of the assumptions is/are implicit in the statement. (+1, -0.33)

Statement : The human body produces Vitamin D when exposed to sunlight.

Assumption I: The human body will have Vitamin D even if it is not consumed via food.

Assumption II: A large portion of the global population suffers from Vitamin D deficiency.

- a. Both I and II are implicit
- b. Only assumption II is implicit
- c. Neither I nor II is implicit
- d. Only assumption I is implicit

76. If $\sin \theta = 15/17$, then $\cot \theta = ?$ (+1, -0.33)

a. $\frac{8}{15}$

b. $\frac{8}{17}$

c. $\frac{15}{8}$

d. $\frac{17}{15}$

77. A sum of Rs. 2,000 was spent in buying a pair of trousers. The sum spent was $\frac{2}{5}$ **(+1, -0.33)**
th of the total money Shashi had with her. How much was the total money she had?

a. Rs. 4,000

b. Rs. 4, 250

c. Rs. 4, 750

d. Rs. 5,000

78. Which one of these is a harvest festival? **(+1, -0.33)**

a. Teej

b. Janmashtami

c. Deepawali

d. Onam

79. If $5050 \times 0.5x = 25250$, then $2505 \div x^2 = ?$ **(+1, -0.33)**

a. 0.2505

b. 25.05

c. 2.505

d. 250.5

80. Identify the material having low coefficient of volume expansion (+1, -0.33)

- a. Iron
 - b. Mercury
 - c. Brass
 - d. Aluminium
-

81. $\sec 45^\circ - \tan 60^\circ = ?$ (+1, -0.33)

- a. $-\sqrt{3} + \sqrt{2}$
 - b. $-\sqrt{3} - \sqrt{2}$
 - c. $\frac{\sqrt{3}}{2}$
 - d. $\sqrt{3} + \sqrt{2}$
-

82. A number is as much greater than 50 as it is lesser than 84. What is the number? (+1, -0.33)

- a. 65
 - b. 66
 - c. 68
 - d. 67
-

83. The volume of a given amount of water _____ between 0°C to 4°C . (+1, -0.33)

- a. is zero

- b. decreases
 - c. remains constant
 - d. increases
-

84. In engineering drawing, the letters LH signifies _____. (+1, -0.33)

- a. Level Hide
 - b. Left Hand
 - c. Low Heat
 - d. Limit of Height
-

85. What is 80% of 50% of 90? (+1, -0.33)

- a. 30
 - b. 34
 - c. 32
 - d. 36
-

86. A wire of length l and radius r has a resistance R . The resistance of another wire made of the same material but having half its length and half its radius will be. (+1, -0.33)

- a. $4R$
 - b. $R/2$
 - c. $2R$
 - d. R
-

87. Kuchipudi has its roots in which Indian State? (+1, -0.33)

- a. Arunachal Pradesh
- b. Kerala
- c. Andhra Pradesh
- d. Himachal Pradesh

88. Safety boots or shoes must be worn in designated areas to protect your _____ from falling objects. (+1, -0.33)

- a. eye
- b. ear
- c. head
- d. feet

89. Pipes A and B can fill a tank in 12 minutes and 16 minutes respectively. Both A and B are opened for 4 minutes and then A is closed. How much extra time will B take to fill the tank completely? (+1, -0.33)

- a. $\frac{20}{3}$ minutes
- b. 7 minutes
- c. $\frac{21}{4}$ minutes
- d. 6 minutes

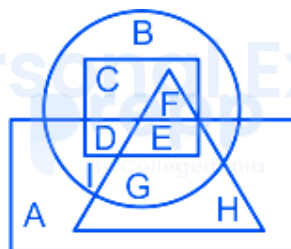
90. The Ajanta Caves in Maharashtra feature paintings and sculptures that depict _____ tales? (+1, -0.33)

- a. Arabic
- b. Islamic
- c. Buddhist
- d. Maratha

91. Identify the material having high coefficient of volume expansion. (+1, -0.33)

- a. Brass
- b. Alcohol
- c. Glass
- d. Water

92. In the following figure, square represents Chinese, triangle represents dancers, circle represents male and rectangle represents architects. Which set of letters represents dancers who are male? (+1, -0.33)



- a. DEIG
- b. DEF
- c. IGH
- d. GEF

93. A body starts from rest. Its displacement is proportional to _____ when its acceleration is constant. (+1, -0.33)

- a. time squared
- b. velocity
- c. work
- d. time

94. A software program that has been developed to harm other computers is called a/an _____. (+1, -0.33)

- a. server
- b. LAN
- c. malware
- d. operating system

95. 86°F is equal to _____. (+1, -0.33)

- a. 20°C
- b. 30°C
- c. 34°C
- d. 10°C

96. Where is the Headquarters of UNESCO located? (+1, -0.33)

- a. New York City

- b. Geneva
- c. Paris
- d. Washington DC

97. A got Rs. 80 as his share of profit where the total profit was Rs. 240 and the ratio of profit distribution between A and B was $x : 2$. What is the value of x ? (+1, -0.33)

- a. 1
- b. 4
- c. 2
- d. 5

98. If $G + H$ means G is daughter of H, $G - H$ means G is sister H and $G * H$ means G is husband of H, which of the following shows that I is the daughter of H? (+1, -0.33)

- a. $I - J + F * H$
- b. $I + J - F * H$
- c. $I - J * F + H$
- d. $I * J - F + H$

99. In a code language, 295 means 'water is liquid', 549 means 'oil is liquid' and 824 means 'oil on water.' Find the code for 'on'. (+1, -0.33)

- a. 4
- b. 2
- c. 8

d. 5

100. Name of the painter of famous painting, 'Mahishasura'.

(+1, -0.33)

- a. MF Hussain
- b. Amrita Sher-Gil
- c. Raja Ravi Verma
- d. Tyeb Mehta

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Your Personal Exams Guide

Part B

101. In diesel cycle combustion takes place at (+1, -0.33)

- a. Constant volume
- b. Constant temperature and pressure
- c. Constant temperature
- d. Constant pressure

102. Wire gauge is a measurement of a wire's - Choose the correct answer. (+1, -0.33)

- a. Brittleness
- b. Tensile strength
- c. Diameter
- d. Hardness

103. Identify the point angle of a Centre punch from the given options. (+1, -0.33)

- a. 30°
- b. 90°
- c. 120°
- d. 60°

104. Identify the instrument used for checking flatness and squareness of a surface? (+1, -0.33)

- a. Go Gauge

- b. Try square
 - c. Vernier height gauge
 - d. Centre punch
-

105. The purpose of dynamo is - Choose the correct option. (+1, -0.33)

- a. Act as reservoir of electrical energy
 - b. Supply electric power
 - c. Convert mechanical energy into electrical energy
 - d. Continually recharge the battery
-

106. The device, which is used to measure the brake power of an engine is called - (+1, -0.33)
Choose the correct answer.

- a. Dynamo meter
 - b. Energy meter
 - c. Torque wrench
 - d. Indicator
-

107. The drive for the diesel fuel feed pump is taken from the (+1, -0.33)

- a. Crankshaft
 - b. Timing gears
 - c. Fuel injection camshaft
 - d. Engine camshaft
-

108. A lubricant oil is needed to run the machine _____ (+1, -0.33)

- a. quickly
- b. With increased friction
- c. With cleanliness
- d. Without noise

109. The instrument used to measure high temperature in the furnace is (+1, -0.33)

- a. Colorimeter
- b. Barometer
- c. Thermometer
- d. Pyrometer

110. Belt slackness is due to _____. (+1, -0.33)

- a. Worn shaft
- b. Worn chain
- c. Worn gear
- d. Worn sprocket

111. Ammeter is used for measurement of _____. (+1, -0.33)

- a. Resistance
- b. Power

- c. Current
 - d. Voltage
-

112. A cutting tool used to finish and enlarge a hole is known as (+1, -0.33)

- a. Drill
 - b. Die
 - c. Tap
 - d. Reamer
-

113. When using Vernier Height Gauge, it should be placed at _____. (+1, -0.33)

- a. Vee Block
 - b. Crank shaft
 - c. Cylinder head
 - d. Surface plate
-

114. A hole is drilled between the crankshaft main journal and crank pin for (+1, -0.33)

- a. Lubricating the connecting rod bearings
 - b. Reducing the crank shaft vibrations
 - c. Reducing crankshaft weight
 - d. Balancing the crank shaft
-

115. The stroke of an engine is _____. (+1, -0.33)

- a. Length of connecting rod
 - b. The distance between TDC and BDC
 - c. Internal diameter of cylinder
 - d. Volume of cylinder
-

116. Scavenging is done to maintain (+1, -0.33)

- a. Oil pressure
 - b. Fuel consumption
 - c. Power output
 - d. Speed
-

117. Much of the heat in the exhaust gases may be recovered by the use of (+1, -0.33)

- a. Heat-exchanger
 - b. Manifold
 - c. Muffler
 - d. Tail pipe
-

118. A depth micrometer can be used to measure _____. (+1, -0.33)

- a. Diameter of bore
- b. Thickness of the bore
- c. Roundness of the bore
- d. Length of the bore

119. Clearance between mating parts is measured by (+1, -0.33)

- a. Feeler gauge
 - b. "Go" gauge
 - c. Dial gauge
 - d. Caliper gauge
-

120. The purpose of the injector provided on a diesel engine is to inject (+1, -0.33)

- a. Lubricant in the bearings
 - b. Fuel in the cylinders
 - c. Lubricant in the cylinder
 - d. Coolant in the cylinder jacket
-

121. Indicated work per cycle is equal to (+1, -0.33)

- a. Mean effective pressure x stroke volume
 - b. Mean effective pressure x bore diameter
 - c. Mean effective pressure x bore arc
 - d. Mean effective pressure x stroke length
-

122. The air filters used in high-speed diesel engines are generally of the type (+1, -0.33)

- a. Dry filters
- b. Heaters

- c. Oil bath filters
- d. Impingement filters

123. Cyaniding and nitriding are two methods of (+1, -0.33)

- a. Normalising
- b. Hardening
- c. Tempering
- d. Case hardening

124. Higher efficiency can be achieved of an OTTO cycle by increasing the (+1, -0.33)

-
- a. Fuel intake
 - b. stroke length
 - c. Cylinder size
 - d. Compression ratio

125. Piston rings are generally made of (+1, -0.33)

- a. Cast iron
- b. Brass
- c. Aluminium
- d. Copper

126. A cutting tool used to cut outside threads is called (+1, -0.33)

- a. Reamer
 - b. Tap
 - c. Drill
 - d. Die
-

127. Water circulation in a thermo-siphon cooling system is caused by (+1, -0.33)

- a. The change in density of the water
 - b. A belt driven water impeller
 - c. Conduction currents
 - d. A gear driven water pump
-

128. The ignition condenser (+1, -0.33)

- a. Reduces arcing at contacts
 - b. Protects plugs from load
 - c. Reduces secondary spark
 - d. Increases contact arcing
-

129. The grooves provided on the entire length of the body of a twist drill are called (+1, -0.33)

- a. webs
- b. Flutes
- c. Lips
- d. Margins

130. Which of the following is not a part of the combination set? (+1, -0.33)

- a. Socket spanners
- b. Steel rule
- c. Square head
- d. Protractor head

131. The vernier caliper is used for measuring- (+1, -0.33)

- a. Roundness
- b. Shape
- c. Flatness
- d. Thickness

132. The instrument used to measure cylinder bore diameter is (+1, -0.33)

- a. Vernier caliper
- b. Outside micrometer
- c. Bore dial gauge
- d. Telescopic gauge

133. The point angle of twist drill for general purposes is (+1, -0.33)

- a. 60°
- b. 90°

c. 135°

d. 118°

134. What is the material used for making Pistons?

(+1, -0.33)

a. Brass

b. Galvanised Copper

c. Aluminum Alloy

d. Steel

135. The study of pneumatics deals with systems driven by -----.

(+1, -0.33)

a. Oil

b. Water

c. Air

d. Solid matter

136. Why is free play in clutch needed?

(+1, -0.33)

a. to prevent the clutch from heating up

b. to increase speed of engine rpm

c. to improve efficiency of braking

d. to facilitate lubrication by oil

137. The function of the alternator in a vehicle is to

(+1, -0.33)

- a. Measure the current
 - b. Discharge the battery
 - c. Measure the voltage
 - d. Charge the battery
-

138. Why is air cleaner filled with oil? (+1, -0.33)

- a. To lubricate
 - b. To prevent dust and dirt from atmosphere
 - c. To pressurize
 - d. To accelerate
-

139. The connecting rod is made up of (+1, -0.33)

- a. Alloy steel
 - b. Aluminium
 - c. Cast iron
 - d. Mild steel
-

140. The tool, which is used for laying out diameter is (+1, -0.33)

- a. Scriber
- b. Divider
- c. Outside micrometer
- d. Tri square

141. What is the composition of Gunmetal?

(+1, -0.33)

- a. Lead and nickel
 - b. Copper, Tin and zinc
 - c. Copper, zinc and nickel
 - d. Lead and zinc
-

142. What is the angle of the drill bit?

(+1, -0.33)

- a. 118°
 - b. 115°
 - c. 119°
 - d. 59°
-

143. A mechanism used to control the speed of an engine is called

(+1, -0.33)

- a. Speedometer
 - b. Regulator
 - c. Odometer
 - d. Governor
-

144. To measure the cylinder bore one of these instruments is used. Identify.

(+1, -0.33)

- a. Screw gauge
- b. Dial indicator

- c. Caliper
 - d. Micrometer
-

145. The electronic ignition system is triggered on and off through _____. (+1, -0.33)

- a. Contact breaker
 - b. Trigger
 - c. Diode
 - d. Permanent magnet
-

146. To increase the output voltage, battery cells are connected in _____ (+1, -0.33)

- a. inclined
 - b. Series
 - c. Parallel
 - d. Series-parallel
-

147. The purpose of thermostat is to keep the engine _____ (+1, -0.33)

- a. Warm
 - b. Cool
 - c. At desired temperature
 - d. Hot
-

148. Which of the following are not symptoms of poor clutch operation? (+1, -0.33)

- a. Vibration of engine
 - b. Difficulty in gear shifting when pedal press
 - c. pedal gets stuck when pressed
 - d. increase in engine noise when pedal press
-

149. A fuse in an electrical circuit 'blows' as a result of a high (+1, -0.33)

- a. Voltage caused by a short circuit
 - b. Current flow caused by an open circuit
 - c. Voltage caused by an open circuit
 - d. Current flow caused by a short circuit
-

150. A rivet is specified by its diameter of _____. (+1, -0.33)

- a. Shank
 - b. Length
 - c. Tail
 - d. The head
-

151. What is the principle on which brakes work? (+1, -0.33)

- a. Vibration
- b. Friction
- c. Suction
- d. Dragging

152. An air chisel is used brake or cut metal objects apart. How is it operated? (+1, -0.33)

- a. Pneumatically
- b. Magnetically
- c. Frictionally
- d. Hydraulically

153. The diesel engine usually emits excessive smoke during (+1, -0.33)

- a. Accelerating
- b. Decelerating
- c. Starting
- d. Idling

154. In a diesel engine, feed pump is located on (+1, -0.33)

- a. Fuel tank
- b. Fuel filter
- c. Cylinder head
- d. F.I.P

155. When tolerance is given on one side of the basic dimension it is called (+1, -0.33)

- a. Allowance system
- b. Unilateral tolerance

- c. Bilateral tolerance
 - d. Tolerance system
-

156. The ratio between BHP and IHP is called (+1, -0.33)

- a. Engine efficiency
 - b. Power efficiency
 - c. Mechanical efficiency
 - d. Thermal efficiency
-

157. A governor is a (+1, -0.33)

- a. Pressure sensitive device
 - b. Temperature sensitive device
 - c. Speed sensitive device
 - d. Vacuum sensitive device
-

158. In starting of diesel engines by electric starting what is used to supply power to the starter motor? (+1, -0.33)

- a. Battery
 - b. Rectifier
 - c. Dynamo
 - d. Generator
-

159. The coolant used for reaming aluminum work piece is (+1, -0.33)

- a. Air pressure
 - b. Water
 - c. Kerosene
 - d. Lard oil
-

160. What is drawn in the cylinder of diesel engine during suction stroke? (+1, -0.33)

- a. Pure air alone
 - b. A mixture of air and fuel
 - c. CNG gas
 - d. Diesel
-

161. Micrometer can measure upto ----- (+1, -0.33)

- a. 0.005 mm
 - b. Microns size
 - c. 0.1 mm
 - d. Least count
-

162. Identify the material used for twist drill. (+1, -0.33)

- a. Alloy steel
- b. H.S.S
- c. Carbide steel
- d. Mild steel

163. Air lock in fuel line will cause (+1, -0.33)

- a. Engine idling high
 - b. Injector pressure is too high
 - c. Late starting and erratic running
 - d. Excess delivery from FI pump
-

164. What is the part of the universal surface gauge which helps to draw a parallel line along a dotted edge known as? (+1, -0.33)

- a. Fine adjusting screw
 - b. Center punch
 - c. Scriber
 - d. Guide pins
-

165. The rate of doing work is called _____. (+1, -0.33)

- a. Power
 - b. Energy
 - c. Force
 - d. Torque
-

166. A maintenance free battery (+1, -0.33)

- a. Does not contain water
- b. Has lead-calcium plate grid

- c. Does not contain acid
- d. Has lead-antimony plate grid

167. Vernier depth gauge is used for measuring (+1, -0.33)

- a. Pitch circle diameter
- b. Round dimension
- c. Step, depth of blind hole
- d. Internal dimension

168. Which one of the following fuel injection systems were originally used in large stationary and marine engines and is now seldom used? (+1, -0.33)

- a. Mechanical injection
- b. Air injection
- c. Solid injection
- d. Airless injection

169. Combustion of the air-fuel mixture in petrol engine takes place through (+1, -0.33)

- .
- a. Intestinal cells
 - b. Cylinder
 - c. Piston
 - d. The elimination cells

170. The principle of a radiator of an engine cooling system is to (+1, -0.33)

- a. Increase the air speed as it flows over the hot surface
 - b. Spread out the hot water over a large area
 - c. Acts as a reservoir for the water
 - d. Cause a heat flow by convection currents
-

171. The operation of the governor can only be effective if the system is airtight which type of governor is this? (+1, -0.33)

- a. Mechanical
 - b. Servo
 - c. Pneumatic
 - d. Hydraulic
-

172. In a diesel engine, fuel is ignited by _____. (+1, -0.33)

- a. Spark plug
 - b. Injector
 - c. Compressed air temperature properties
 - d. Glow Plug
-

173. What is the SI unit of pressure? (+1, -0.33)

- a. Newton
- b. Joule

c. Pascal

d. Dyne

174. A noise produced in the cylinder of a diesel engine during combustion, usually when the fuel oil has a low ignition quality is called (+1, -0.33)

a. Fuel knock

b. Fuel explosion

c. Fuel thrust

d. Fuel burst

175. What is the other name for Jenny spanners? (+1, -0.33)

a. Outside caliper

b. Joint spanner

c. Inside caliper

d. Odd-leg caliper