IES (ESE)-2011 Solution, Answer Key
Mechanical Paper-I

If you found any discrepancy in the options mail to iesacademy@yahoo.com

Q. No.	SET A	SET B	SET C	SET D	Q. No.	SET A	SET B	SET C	SET D	Q. No.	SET A	SET B	SET C	SET D	Q. No.	SET A	SET B	SET C	SET D
1	B	C	D	A	31	B	B	A	D	61	D	A	C	B	91	D	B	B	B
2	C	D	D	D	32	C	B	C	B	62	D	A	D	B	92	C	B	B	D
3	D	B	C	A	33	D	C	D	D	63	C	A	B	B	93	D	D	C	C
4	A	B	D	D	34	A	A	C	D	64	D	C	B	A	94	C	D	A	C
5	D	A	B	C	35	B	A	C	A	65	B	B	A	C	95	A	A	A	D
6	A	A	D	B	36	B	A	A	D	66	D	A	A	A	96	B	B	A	D
7	D	D	C	A	37	B	C	C	A	67	C	C	D	D	97	C	D	C	B
8	D	A	A	B	38	B	B	A	D	68	A	D	A	B	98	A	A	B	C
9	B	A	C	C	39	D	C	C	C	69	C	C	A	A	99	A	A	C	B
10	D	B	A	D	40	B	A	A	B	70	A	D	B	C	100	A	A	A	C
11	C	B	B	B	41	A	D	D	C	71	B	A	B	B	101	A	D	A	A
12	D	C	D	B	42	C	D	D	D	72	B	C	C	B	102	D	D	D	A
13	C	D	C	D	43	B	C	A	B	73	C	D	D	C	103	A	A	A	A
14	D	A	C	D	44	C	D	A	B	74	C	C	A	A	104	B	A	B	C
15	C	B	D	A	45	A	B	C	A	75	D	C	B	A	105	C	C	C	B
16	C	B	D	B	46	A	D	C	A	76	D	A	B	A	106	B	C	B	A
17	A	B	B	D	47	A	C	A	D	77	B	C	B	C	107	A	C	A	C
18	A	B	C	A	48	C	A	C	A	78	C	A	B	B	108	B	C	B	D
19	D	D	B	A	49	B	C	D	A	79	B	C	D	C	109	C	D	C	C
20	D	B	C	A	50	B	A	C	B	80	C	A	B	A	110	D	C	D	D
21	C	B	A	B	51	C	B	D	B	81	A	A	B	D	111	B	D	B	A
22	C	B	A	D	52	A	B	B	C	82	C	D	B	D	112	B	B	B	C
23	B	B	A	A	53	B	C	D	D	83	A	A	B	C	113	D	D	D	D
24	B	A	C	A	54	D	C	D	A	84	C	B	A	D	114	A	D	D	C
25	A	C	B	C	55	A	D	A	A	85	A	C	C	B	115	A	A	A	C
26	A	A	A	C	56	C	D	D	B	86	C	B	A	D	116	B	D	B	A
27	D	D	C	A	57	A	B	A	B	87	C	A	D	C	117	D	A	D	C
28	A	B	D	C	58	B	C	D	B	88	D	B	B	A	118	A	D	A	A
29	A	A	C	D	59	B	B	C	D	89	C	C	A	C	119	A	C	A	C
30	B	C	D	C	60	B	C	B	B	90	A	D	C	A	120	A	B	A	A

Mechanical Engineering Paper-I

Explation of SET-A

33. Direct Question from HMT book of R K Rajput Question No. 73 Ans. (d)

42. Some work can be obtained by expander. So it will decrease irreversidility.

56. $k = \dfrac{\Delta p}{-\dfrac{\Delta V}{V}}$ if $\Delta p \uparrow then \Delta V \downarrow$ and bulk modulus (k) remains same

74. In thixotropic substance a time dependant shear stress is there

$$\tau = \mu \left(\frac{du}{dy} \right)^n + f(t)$$

Where f(t) is decreasing

For Bingham or Ideal plastic fluid

$$\tau = \tau_0 + \mu \left(\frac{du}{dy} \right)^n$$

96. Water jet machining used speed of water 1000 m/s which is supersonic.

117. The exhaust gases can not be cooled down below a certain temperature. The sulphuric acid dewpoint, to avoid low temperature corrosion. If colled below 100ºC some water vapour condenses into liquid droplets which reacts with SO_2 or SO_3 to form acid.

Explation of SET-B

13. Direct Question from HMT book of R K Rajput Question No. 73 Ans. (d)

25. $k = \dfrac{\Delta p}{-\dfrac{\Delta V}{V}}$ if $\Delta p \uparrow then \Delta V \downarrow$ and bulk modulus (k) remains same

39. Some work can be obtained by expander. So it will decrease irreversidility.

54. In thixotropic substance a time dependant shear stress is there

$$\tau = \mu \left(\frac{du}{dy} \right)^{n} + f(t)$$

Where f(t) is decreasing

For Bingham or Ideal plastic fluid

$$\tau = \tau_0 + \mu \left(\frac{du}{dy} \right)^{n}$$

65. Water jet machining used speed of water 1000 m/s which is supersonic.

97. The exhaust gases can not be cooled down below a certain temperature. The sulphuric acid dewpoint, to avoid low temperature corrosion. If colled below 100ºC some water vapour condenses into liquid droplets which reacts with SO_2 or SO_3 to form acid.

Explation of SET-C

14. In thixotropic substance a time dependant shear stress is there

$$\tau = \mu \left(\frac{du}{dy} \right)^n + f(t)$$

Where f(t) is decreasing

For Bingham or Ideal plastic fluid

$$\tau = \tau_0 + \mu \left(\frac{du}{dy} \right)^n$$

25. Water jet machining used speed of water 1000 m/s which is supersonic.

73. Direct Question from HMT book of R K Rajput Question No. 73 Ans. (d)

85. $k = \dfrac{\Delta p}{-\dfrac{\Delta V}{V}}$ $if \ \Delta p \uparrow then \Delta V \downarrow$ and bulk modulus (k) remains same

99. Some work can be obtained by expander. So it will decrease irreversidility.

117. The exhaust gases can not be cooled down below a certain temperature. The sulphuric acid dewpoint, to avoid low temperature corrosion. If colled below 100°C some water vapour condenses into liquid droplets which reacts with SO_2 or SO_3 to form acid.

Explation of SET-D

17. The exhaust gases can not be cooled down below a certain temperature. The sulphuric acid dewpoint, to avoid low temperature corrosion. If colled below 100ºC some water vapour condenses into liquid droplets which reacts with SO_2 or SO_3 to form acid.

53. Direct Question from HMT book of R K Rajput Question No. 73 Ans. (d)

65. $k = \dfrac{\Delta p}{-\dfrac{\Delta V}{V}}$ $if\ \Delta p \uparrow then \Delta V \downarrow$ and bulk modulus (k) remains same

79. Some work can be obtained by expander. So it will decrease irreversidility.

94. In thixotropic substance a time dependant shear stress is there

$$\tau = \mu \left(\frac{du}{dy} \right)^n + f(t)$$

Where f(t) is decreasing

For Bingham or Ideal plastic fluid

$$\tau = \tau_0 + \mu \left(\frac{du}{dy} \right)^n$$

105. Water jet machining used speed of water 1000 m/s which is supersonic.

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Solution, Answer Key

Engineering Service Examination-2011