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Rajasthan Public Service Commission, Ajmer

Expert Validation of Answer Key

Name of Examination योजनाक सम अगित परीक्षा 2015

Name of Expert 1

(with Post & Contact no.)

Question No. (Series A)	Answer	Remarks/References (Use proper arguments or references in support of your answers)
1	(1)	RPSC is correct Sol. $A = \{0, 2, 4, 6, 8, 10\}$ $B = \{2, 3, 5, 7\}$ $C = \{3, 6, 9, 12\}$ $A \cap (B \cup C) = \{2, 6\}$
3	(1) and (3) delete	(-1) $R(-1) \Rightarrow R$ is not reflexive $3R6$ and $6R8$ but $3R8 \Rightarrow R$ is not transitive, More than one correct options, Q may be deleted.
7	(3)	RPSC is correct Three points of discontinuity are $(x=0, +1, -1)$

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Question No. (Series A)	Answer	Remarks/References (Use proper arguments or references in support of your answers)
10	(1)	<p>RPSC is correct</p> <p>Sol.</p> $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} = \lim_{h \rightarrow 0} \frac{f(x-h) - f(x)}{-h}$ $= f'(x) - f'(x) = 0$
19	(4)	<p>RPSC is correct</p> <p>Sol. $f(x) = x^4 - x$ $f'(x) = 4x^3 - 1$ for $x = \frac{1}{2}$, $f'(x) < 0 \therefore f'(x) > 0$ for all $x > 1$</p>
26	(2)	<p>RPSC is correct</p> $\frac{d^3 y}{dx^3} + \frac{1}{x} \frac{d^2 y}{dx^2} = \frac{e^x}{x}$ <p>is linear diff. equ of order 3</p>

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Question No. (Series A)	Answer	Remarks/References (Use proper arguments or references in support of your answers)
27	(2)	<p>Rpsc is correct.</p> <p>Solⁿ $\frac{dy}{dx} = \frac{1}{x+y+1}$</p> <p>put $x+y+1 = v$ solⁿ.</p> $\frac{dv}{dx} = \frac{v+1}{v} \Rightarrow v - \log(v+1) = x + C$ $\Rightarrow y+1 = \log(x+y+2) + C$
48	all opt. are wrong Delete	<p>when $g'(x) = 0$, we find $g(x) = f'(x)$</p> <p>but $g''(x) = 0$ at $g(x) = f'(x)$</p> <p>\therefore NO extreme value exist</p> <p>Q. 48 may be deleted</p>
49	(1)	<p>Rpsc is correct</p> <p>Q. 49 is <u>within syll</u> under the application of integrals to find area between curve.)</p>

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Question No. (Series A)	Answer	Remarks/References (Use proper arguments or references in support of your answers)
53 54	(2)	RPSC is correct Ref. Page 35.24 Ex 35.B Q 124 (New Objective Mathematics Vol.2, JPH) Ed 2008
57	(4)	RPSC is correct Ref- Q. 16 P. 183, book Modern Algebra by AR Vasishth Meerut (Krishna Prakashan)
59	(3) del.	Q. (59) is <u>out of syllabus</u> as center of group is not the part of syll. It may be deleted

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Question No. (Series A)	Answer	Remarks/References (Use proper arguments or references in support of your answers)
61	(1)	RPSC is correct Q. 61 is within the syll. (It is 3 rd law of isomorphism)
62	(3)	RPSC is correct Q. 62 is within the syll (within topic Normal subgroup) (Theorem 3.1 P 96, book on Abst-algebra (pub: Navkar Prakashan 2012-13))
82	all ans wrong del.	C-R equ. in Polar form are $\frac{\partial u}{\partial r} = \frac{1}{r} \frac{\partial v}{\partial \theta} ; \frac{\partial u}{\partial \theta} = -r \frac{\partial v}{\partial r}$ Page 60 (Adv. complex Analysis) by Navkar Prakashan all ans are wrong (Printing mistake) Q may be deleted.

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Question No. (Series A)	Answer	Remarks/References (Use proper arguments or references in support of your answers)
103	(3)	RPSC is correct Ref. P. 129 (Analytic statics by S A Mollah (Books and allied Publ. Ltd, kolkata))
104	(2)	RPSC is correct Ref. P 197 art. 4.5 of Book Analytic statics by S A Mollah (Books and allied Pub. Ltd, kolkata)
115	(2) ad (4) del.	More than one i.e (2) ad (4) ans are correct, RPSC is wrong, Q may be deleted. Ref P 42 Differential geometry (Ramesh Book depo. Jaipur Ed 2006-7.)

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126	3	PSC का उत्तर सही है
141	1	PSC का उत्तर सही है
145	4	PSC का उत्तर सही है

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